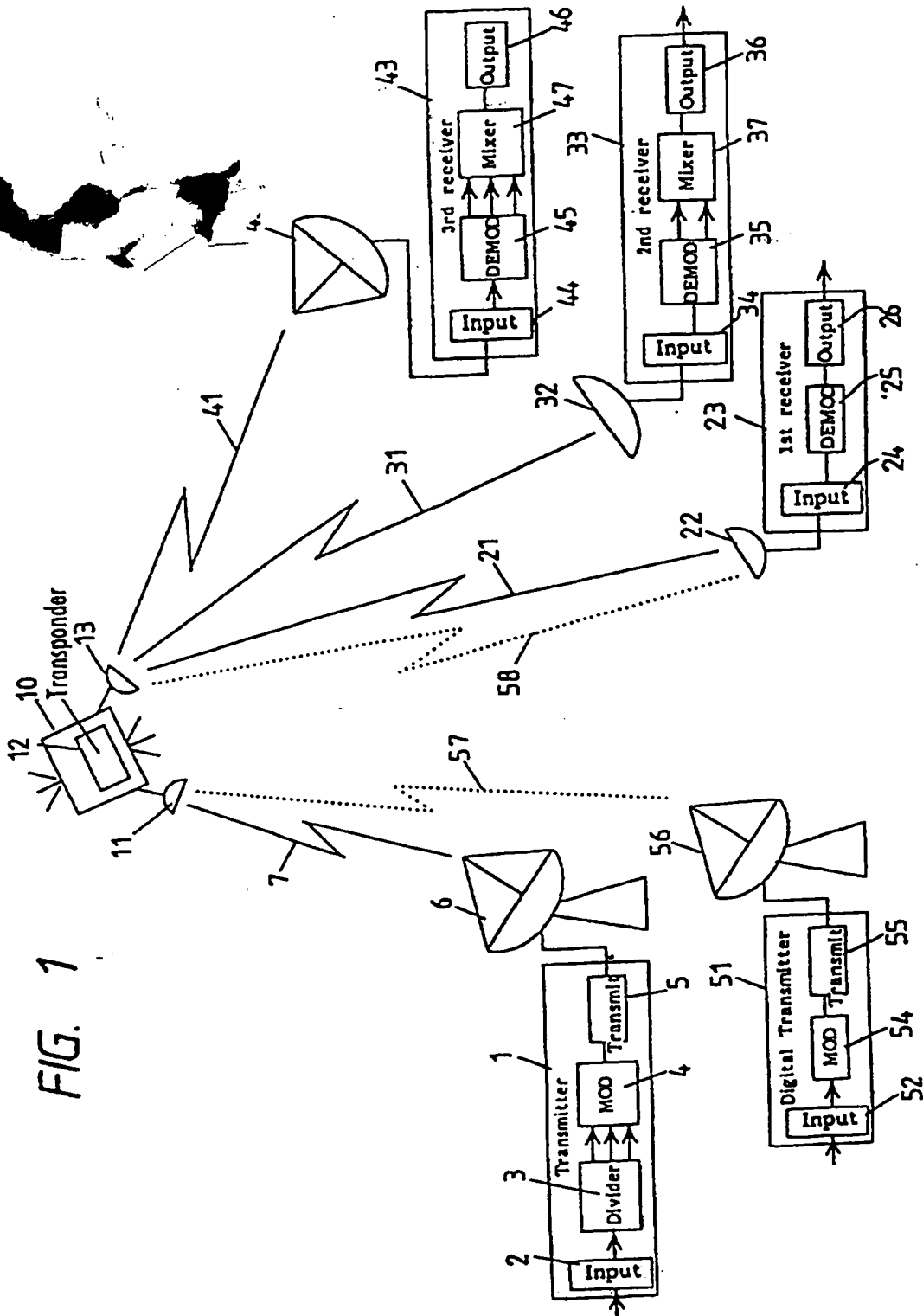
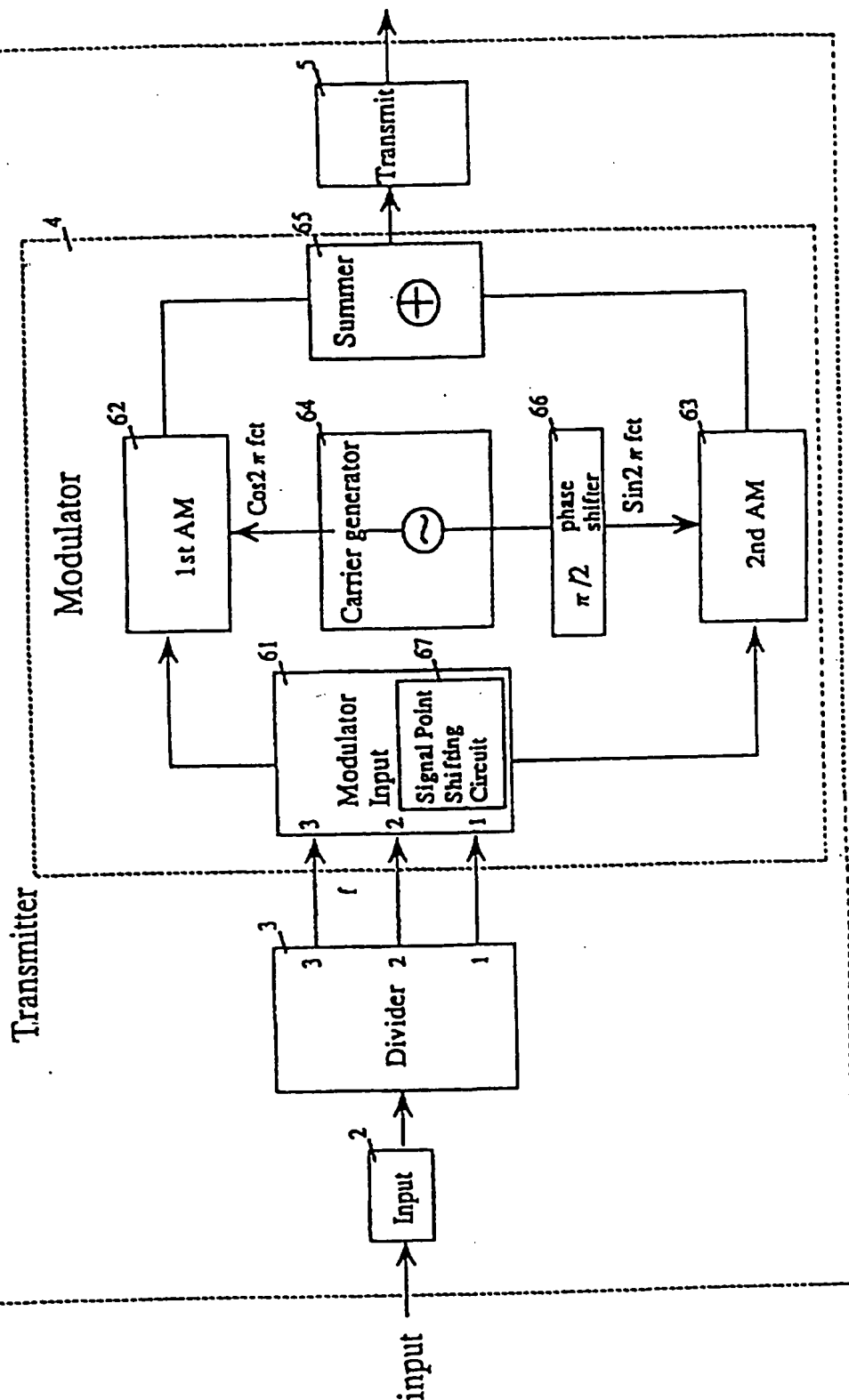


FIG. 1

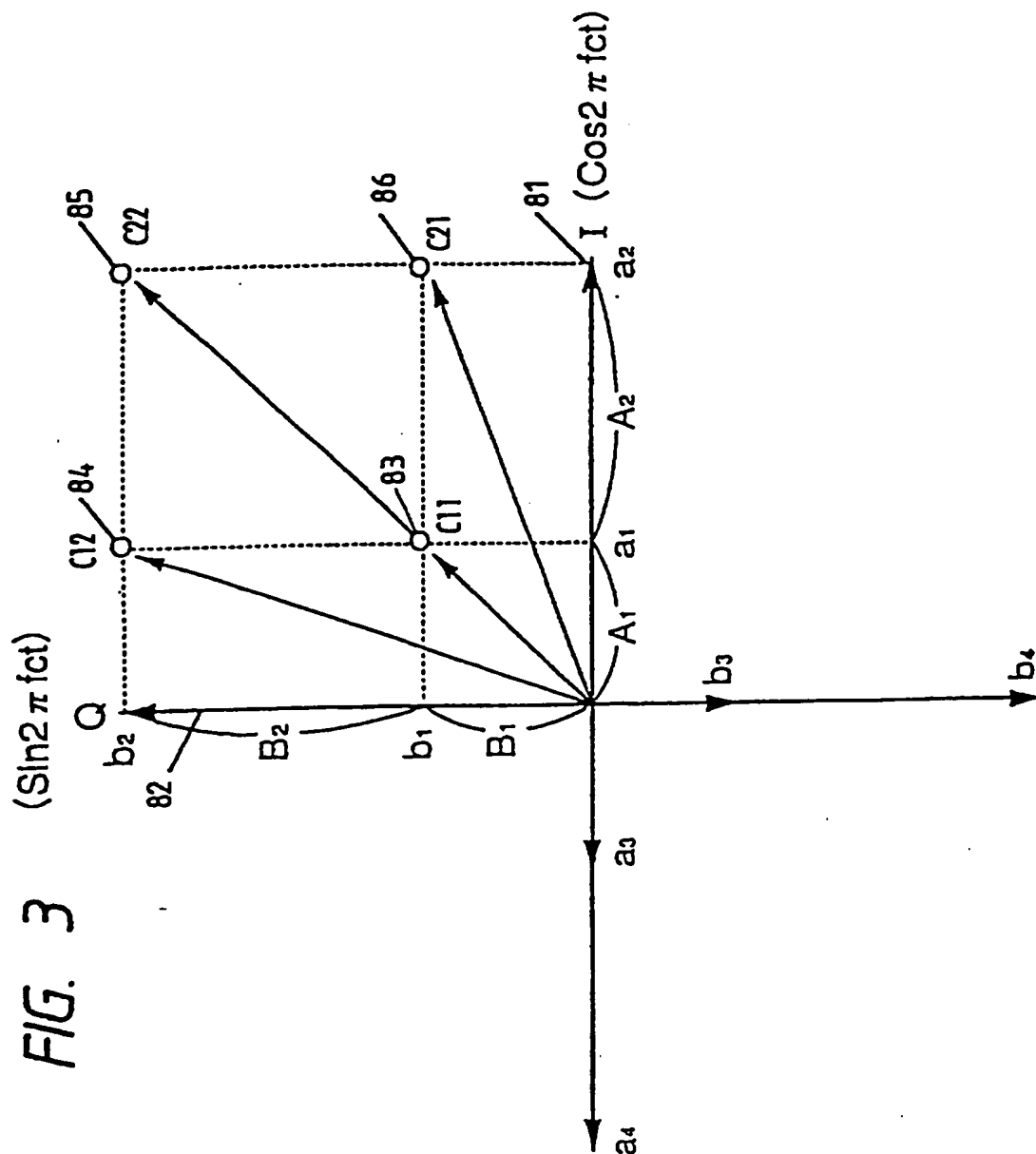


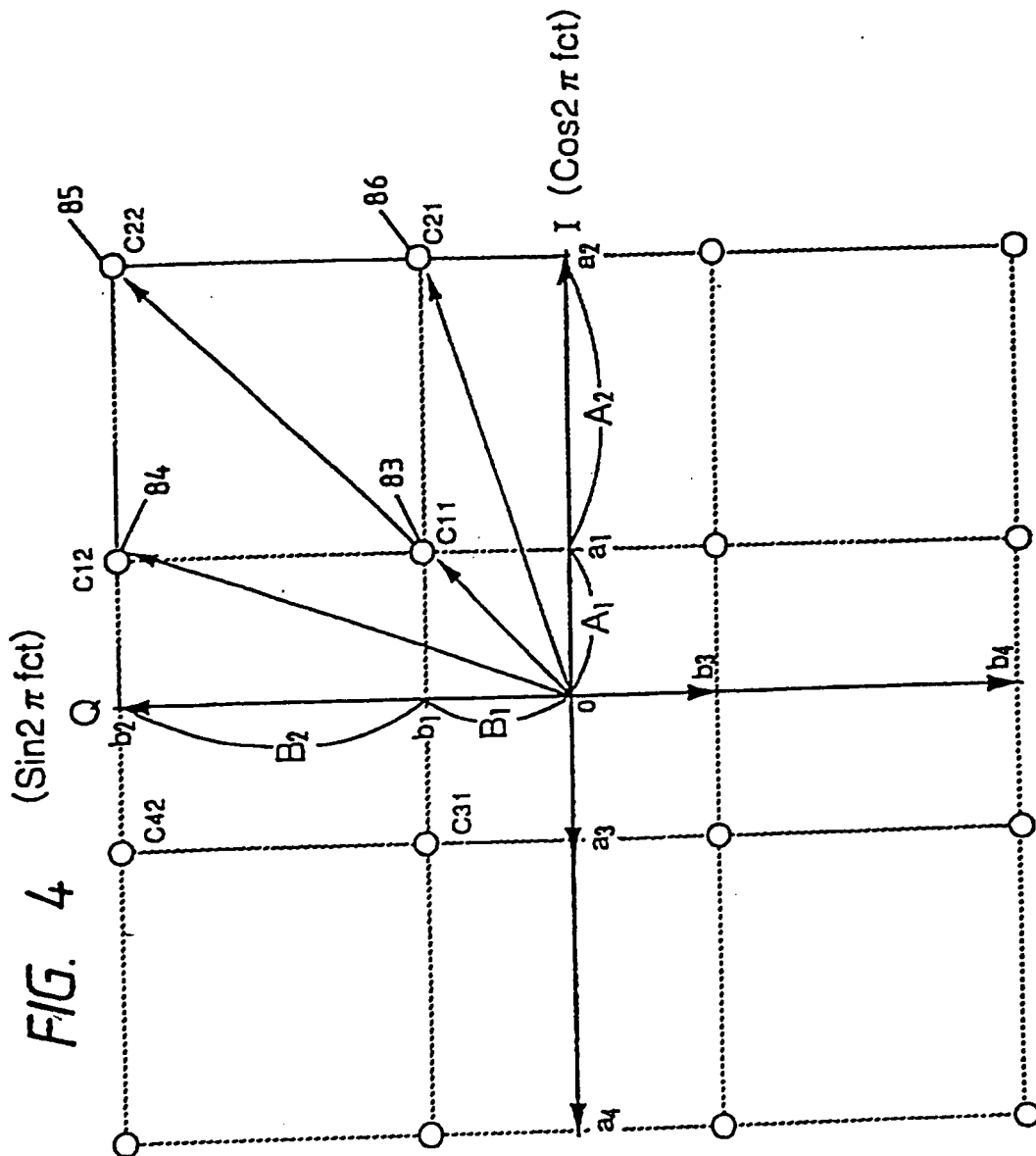
00027-89007260

FIG. 2



000227 8900m260





000221-390074.00

FIG. 5  $(\sin^2 \pi fcl)$

FIG. 6

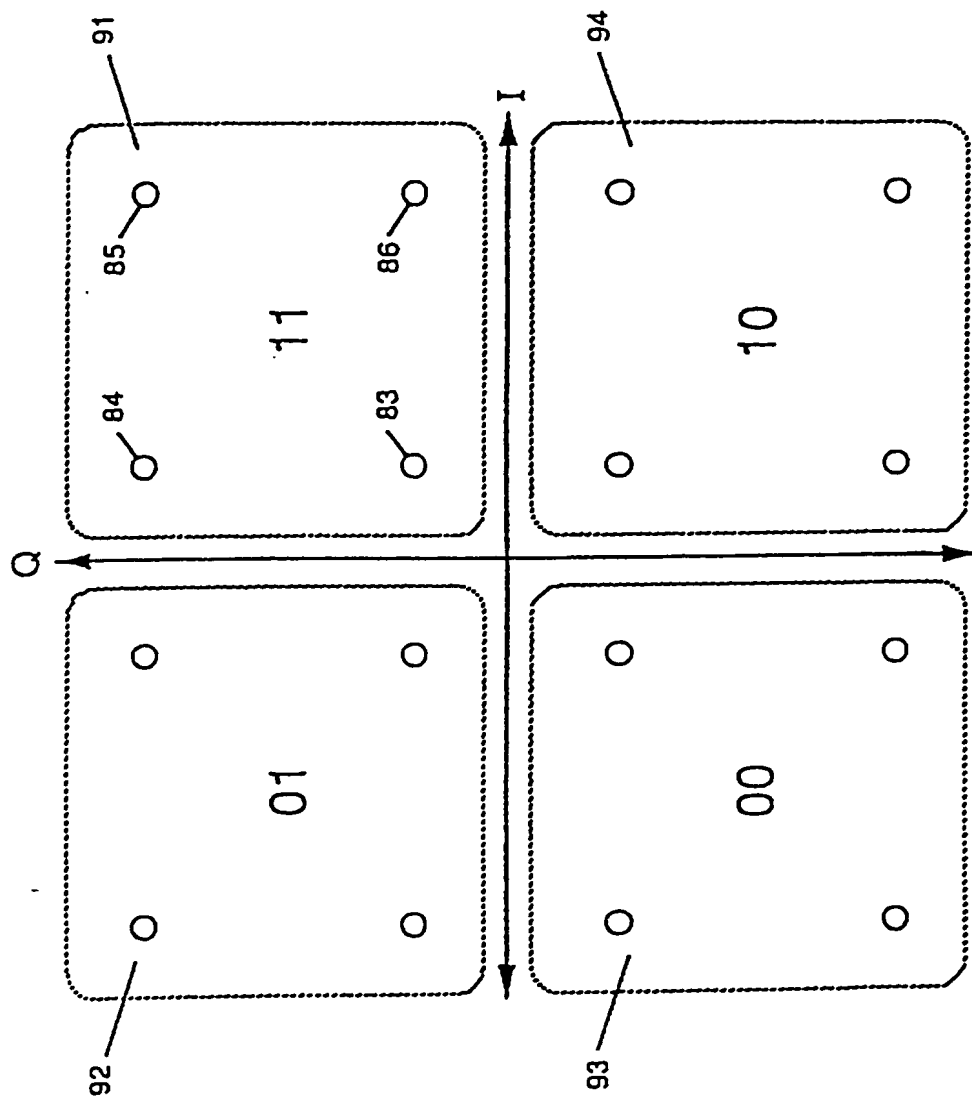
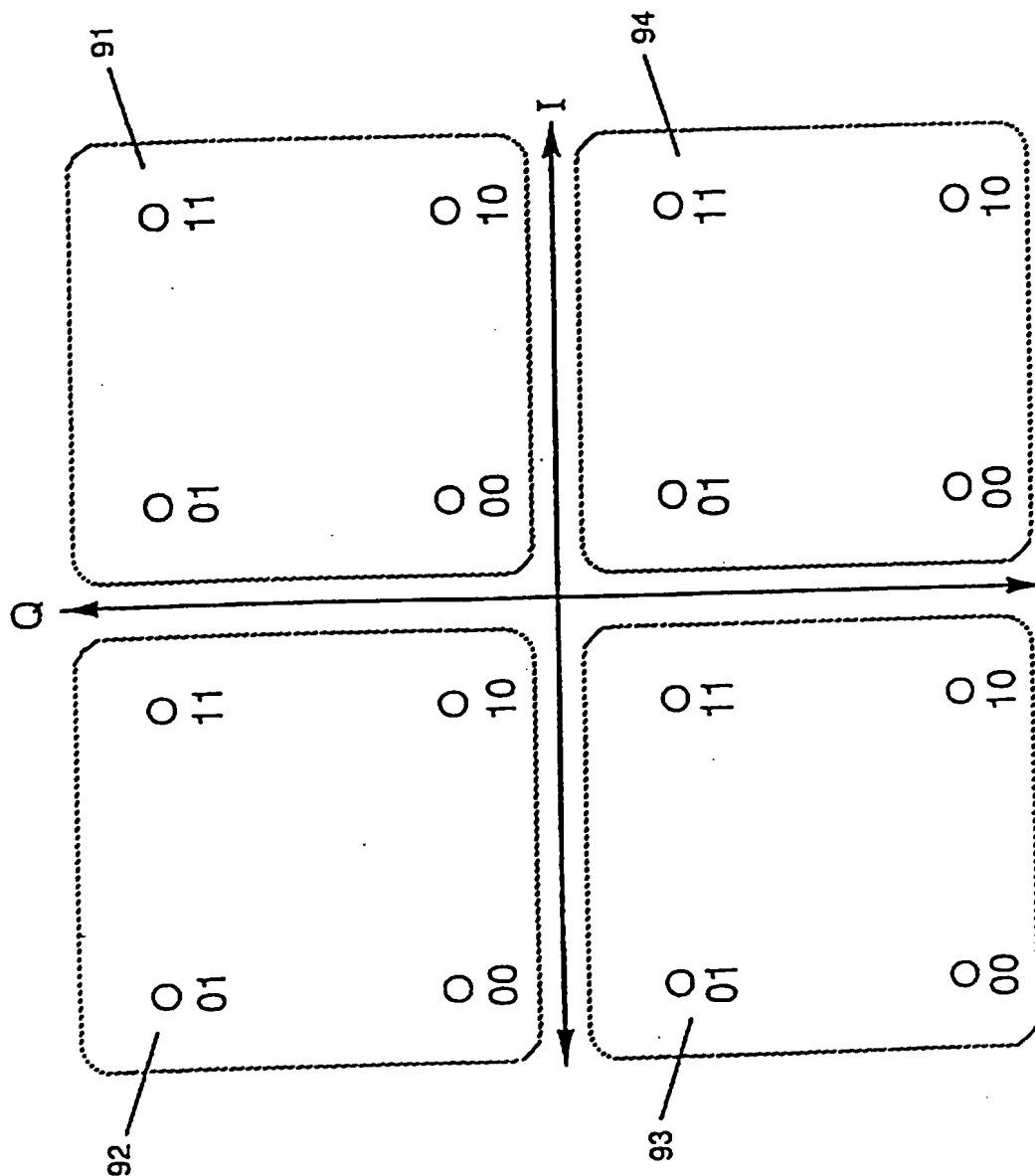


FIG. 7



**THE UNIVERSITY OF CHICAGO**

FIG. 8

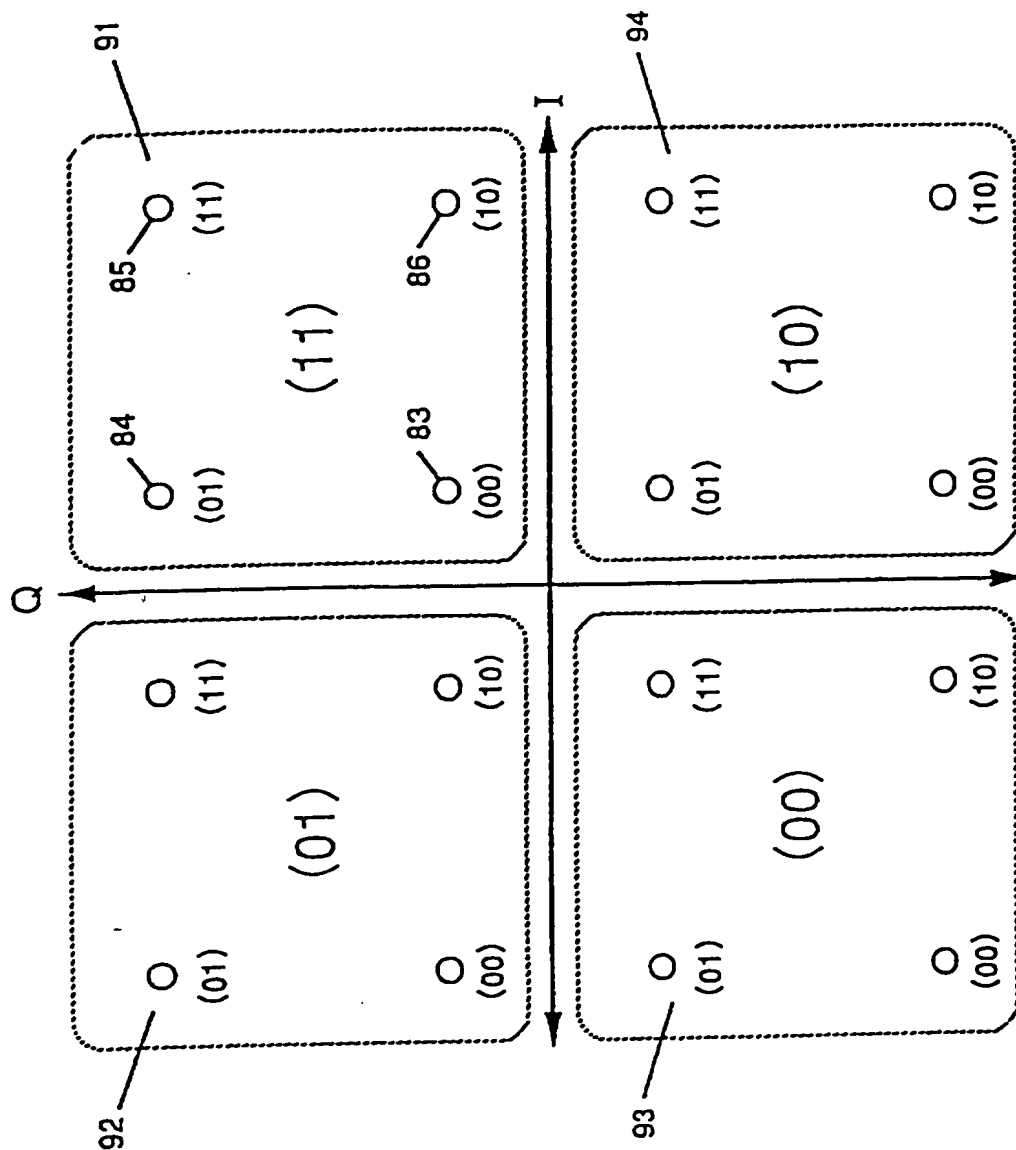




FIG. 9

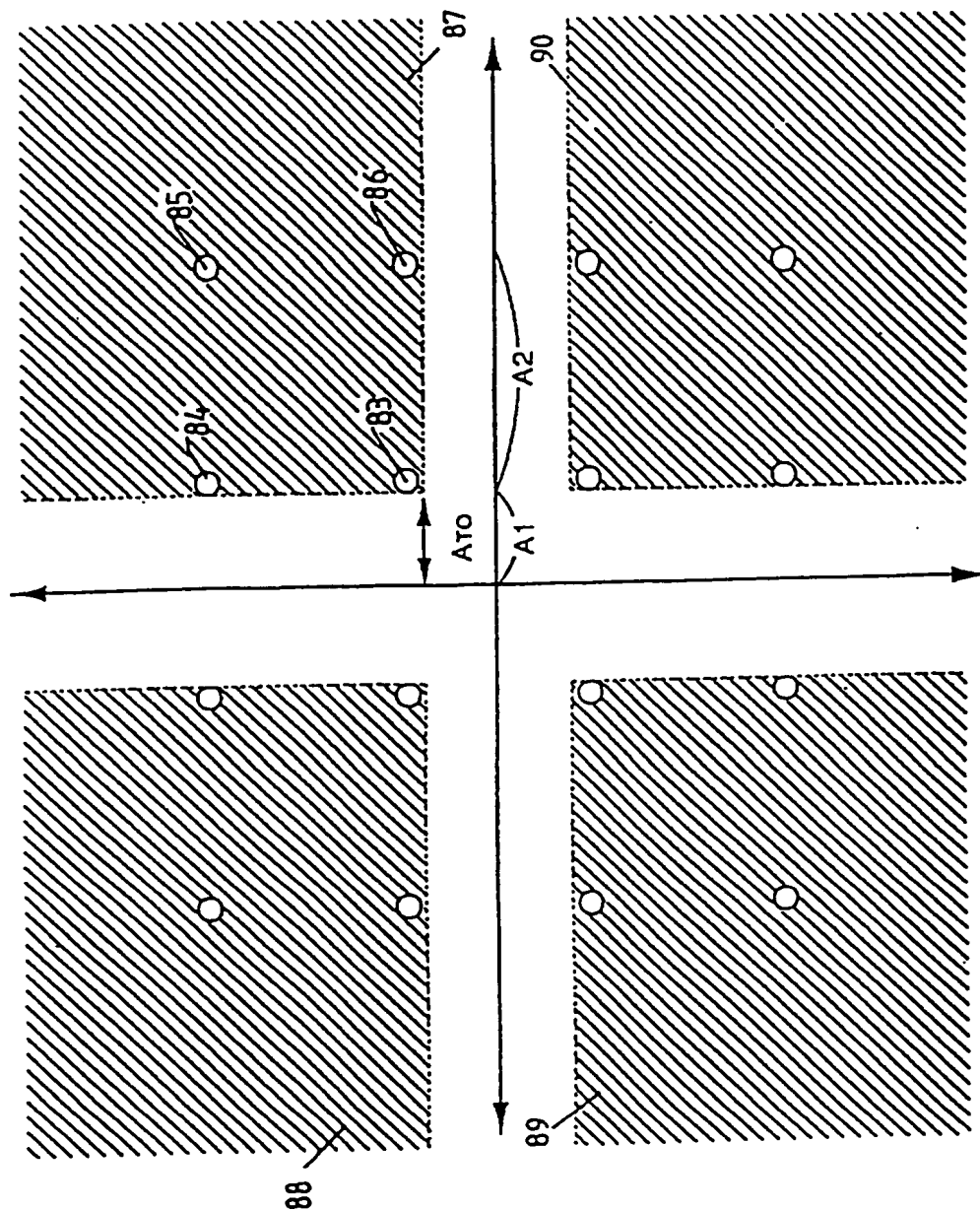


FIG. 10

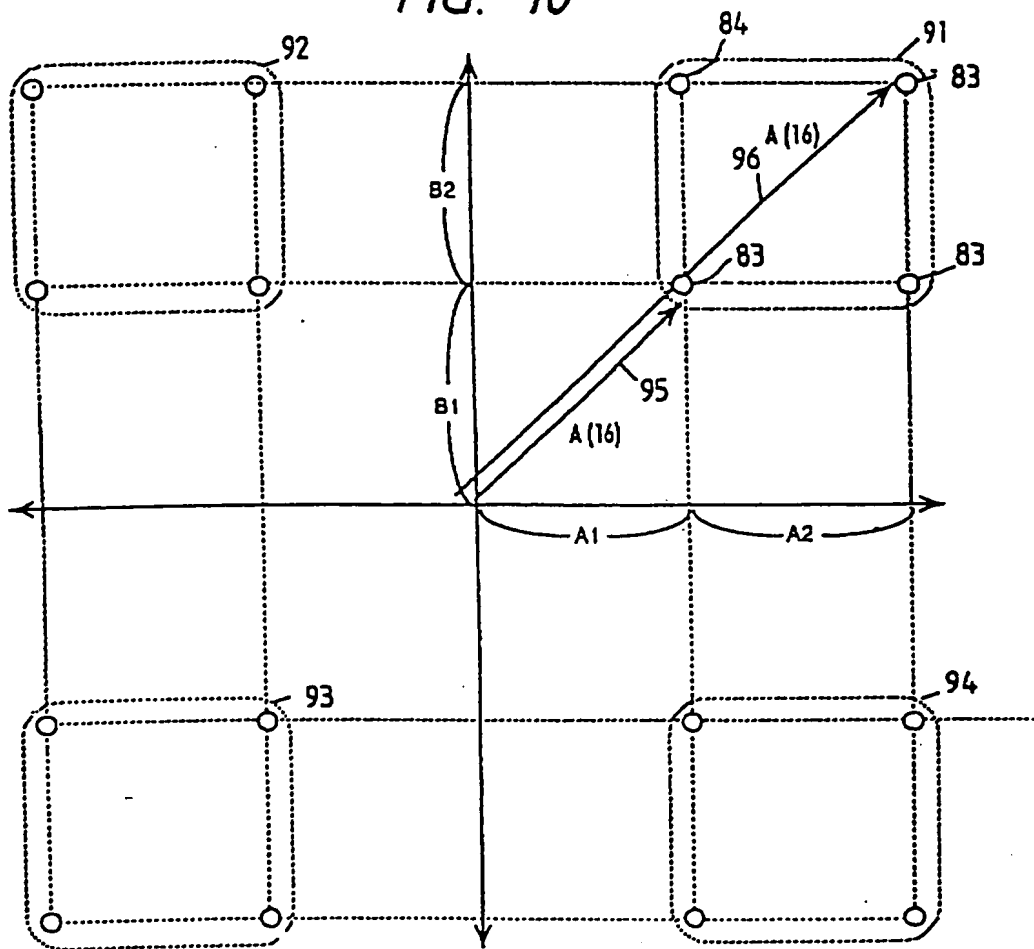
[illegible]

FIG. 11

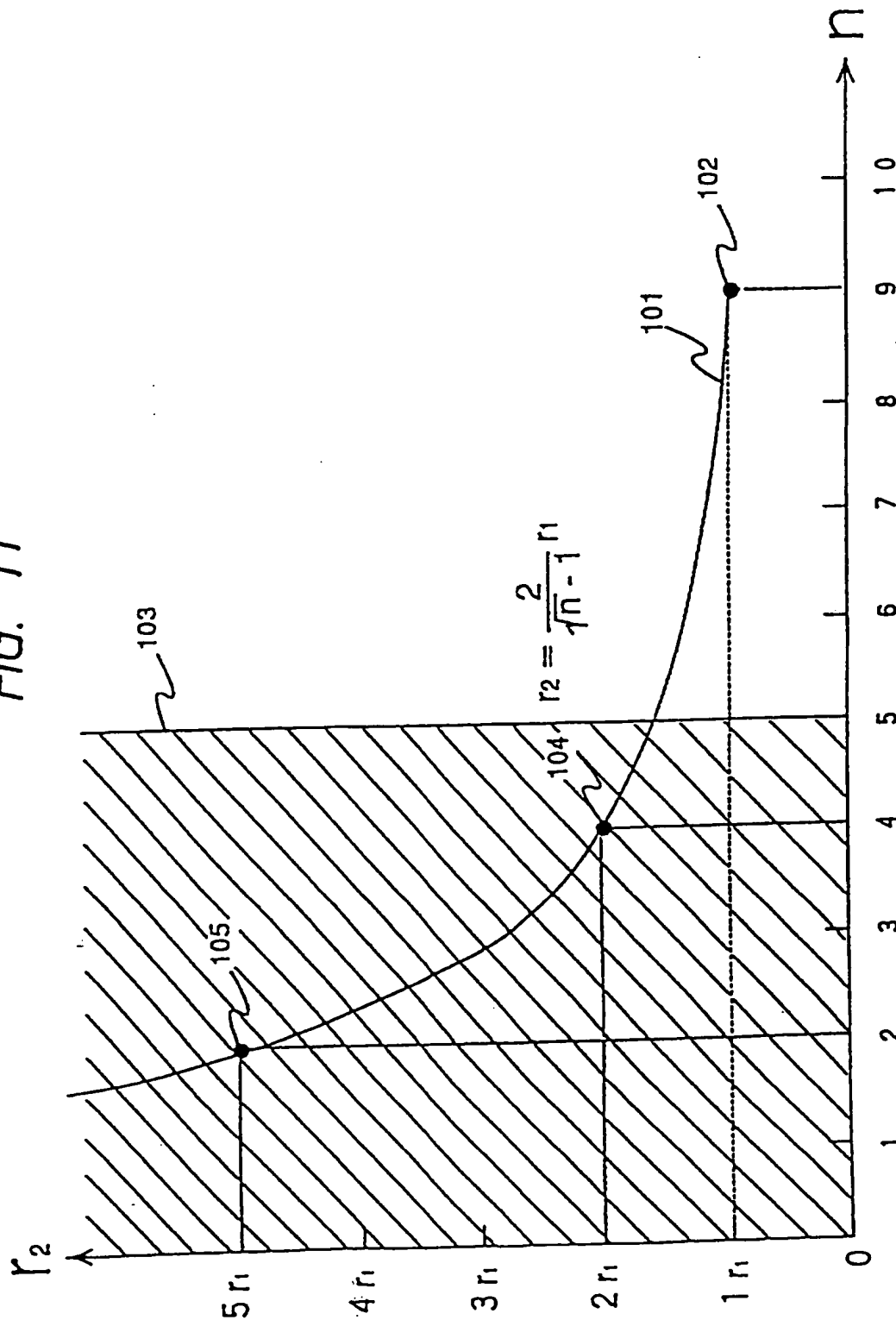
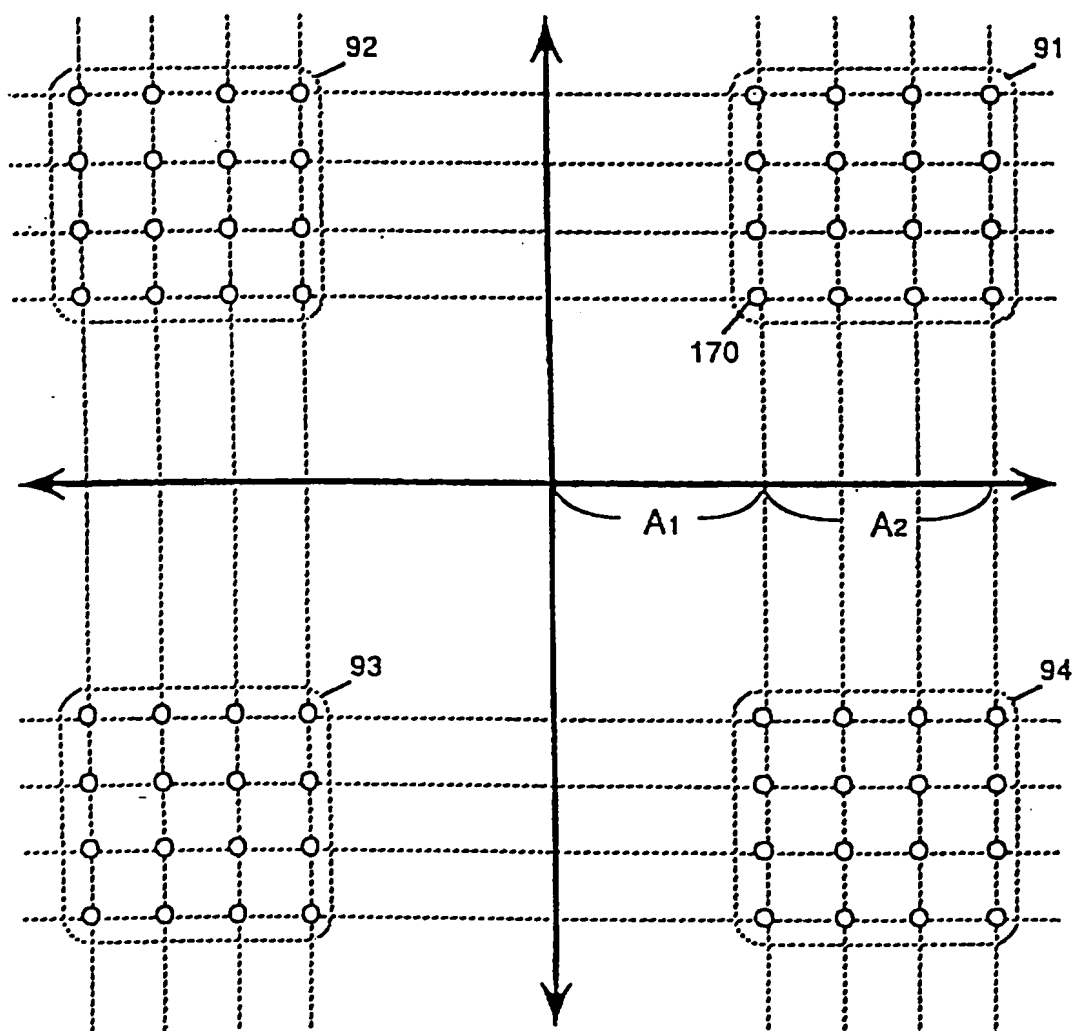
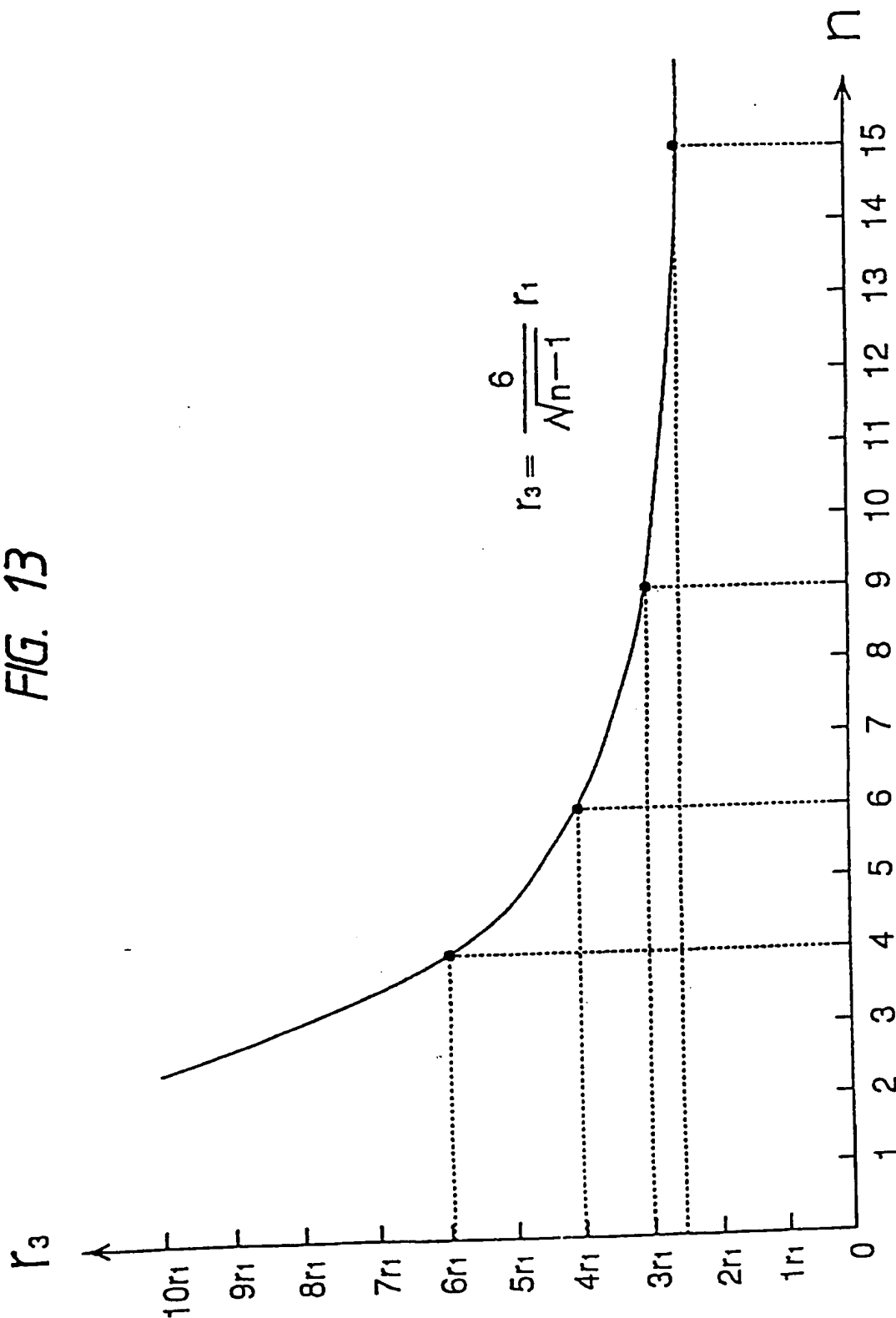


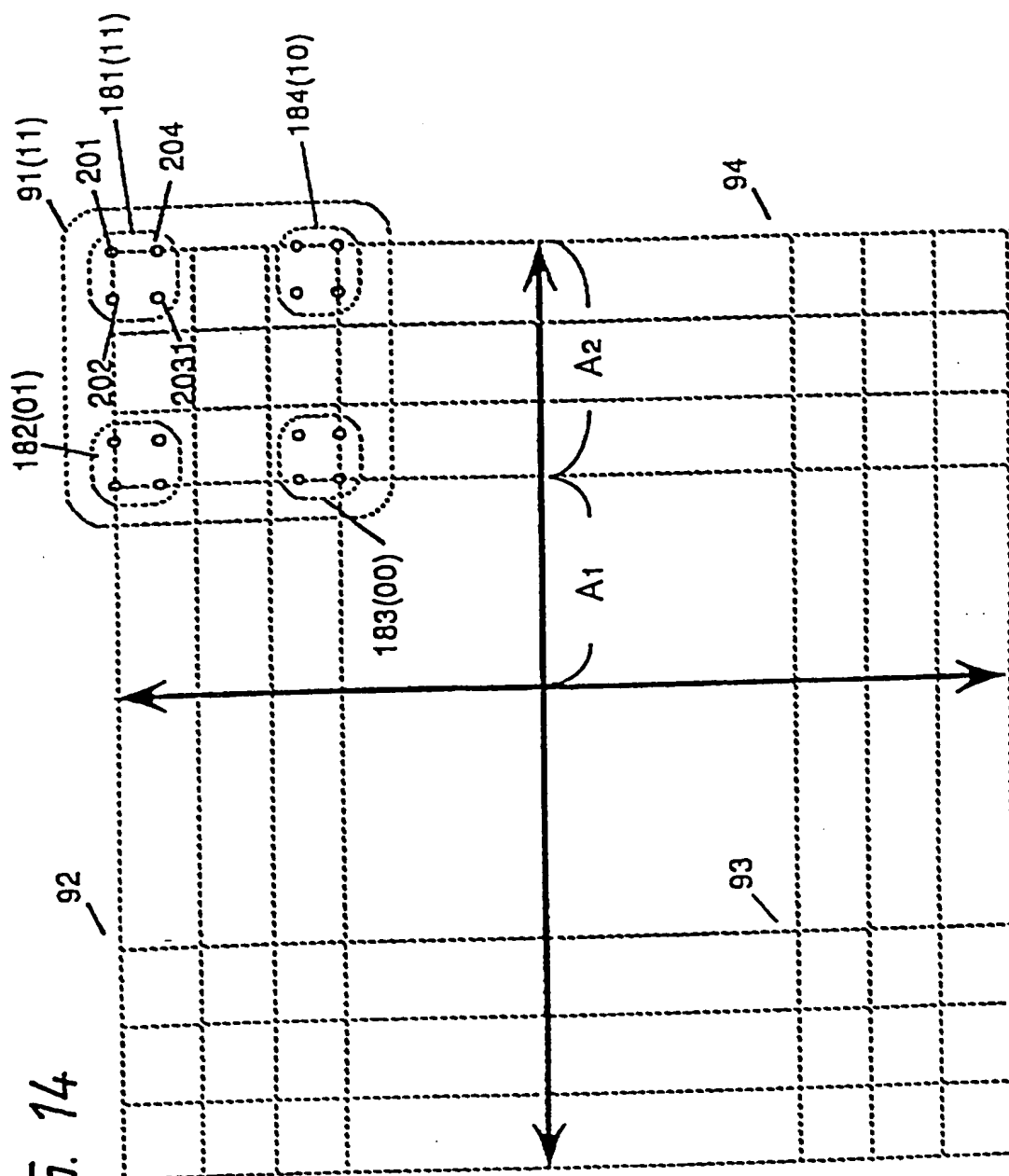
FIG. 12



000001-135007-000

FIG. 13





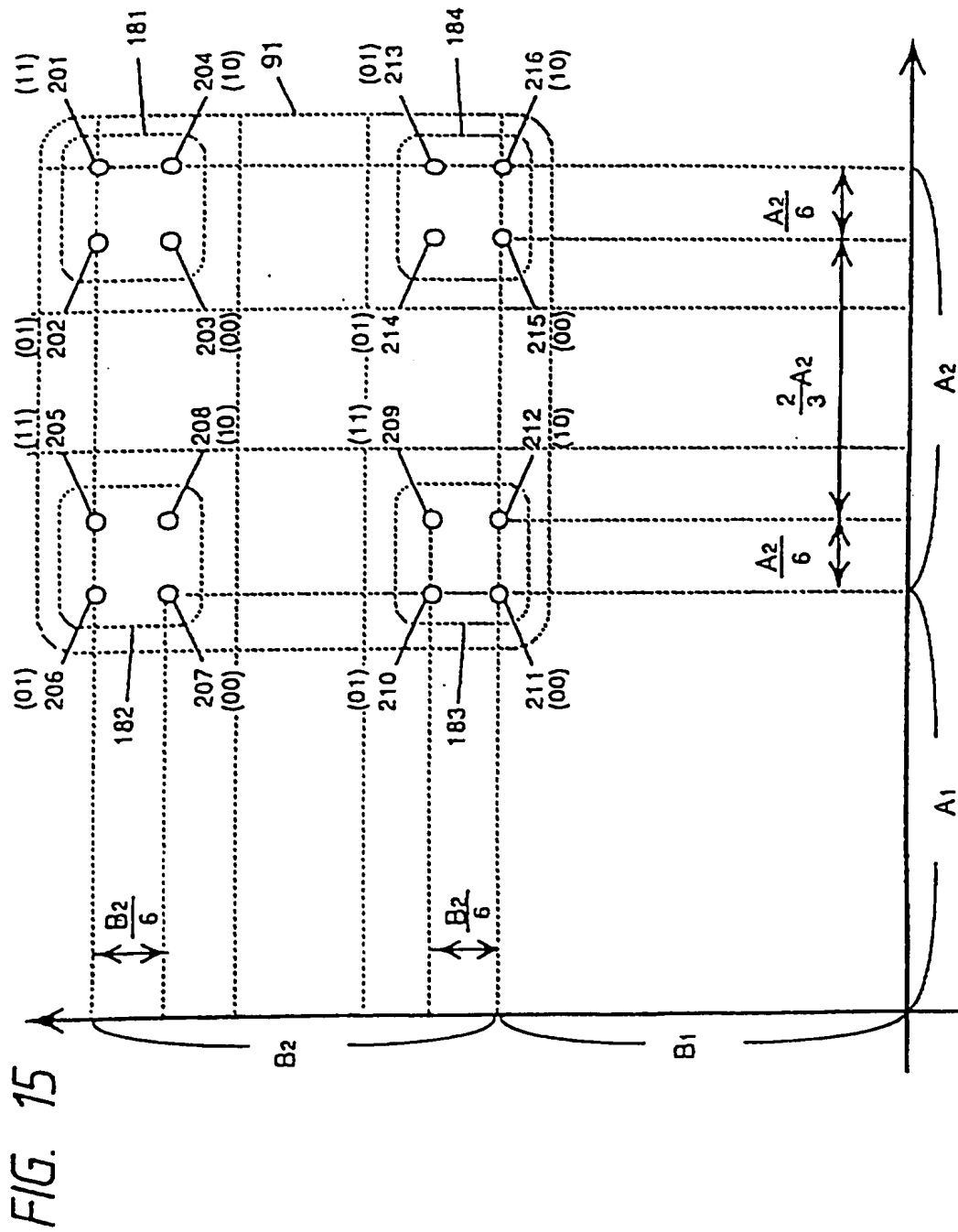
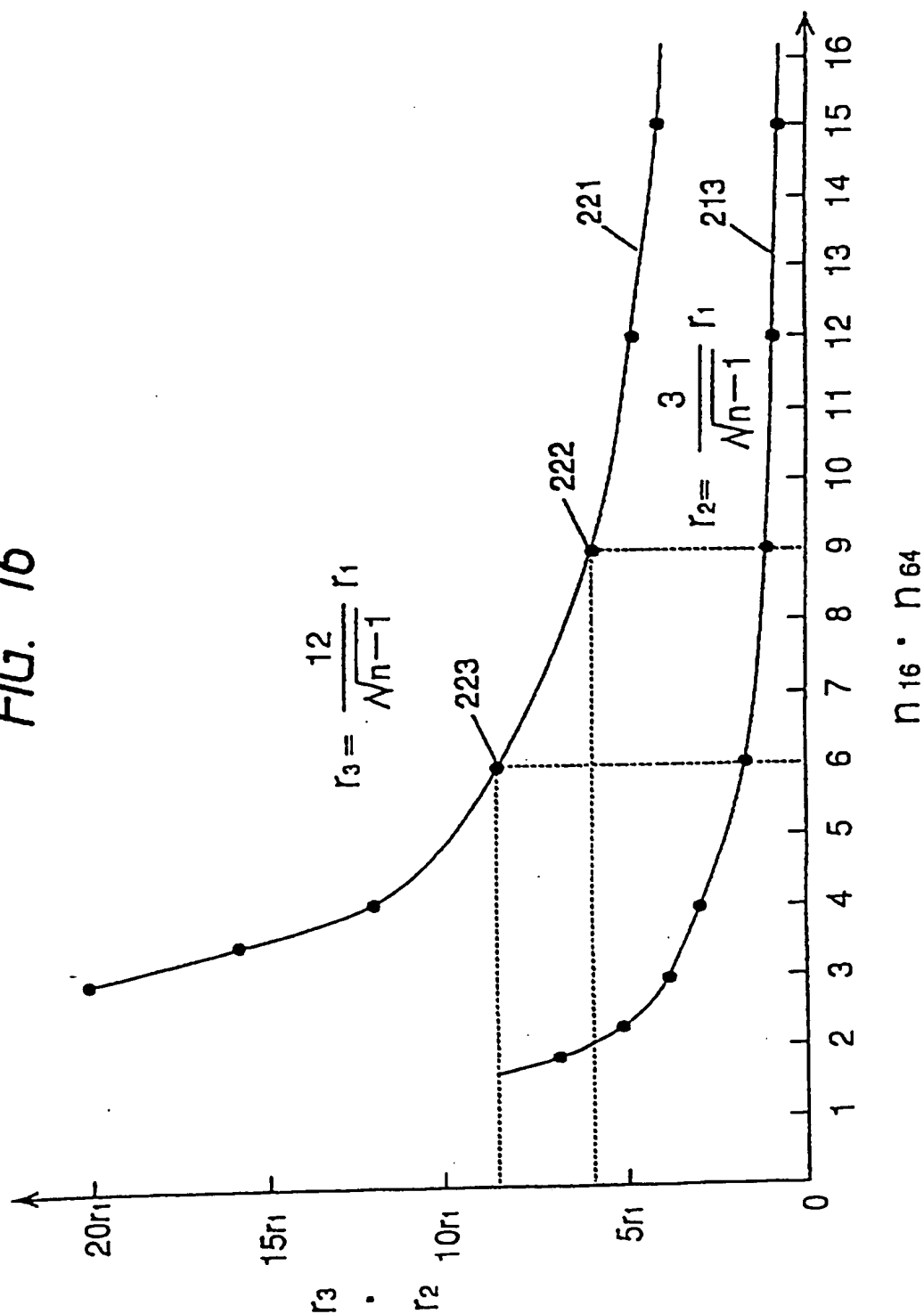
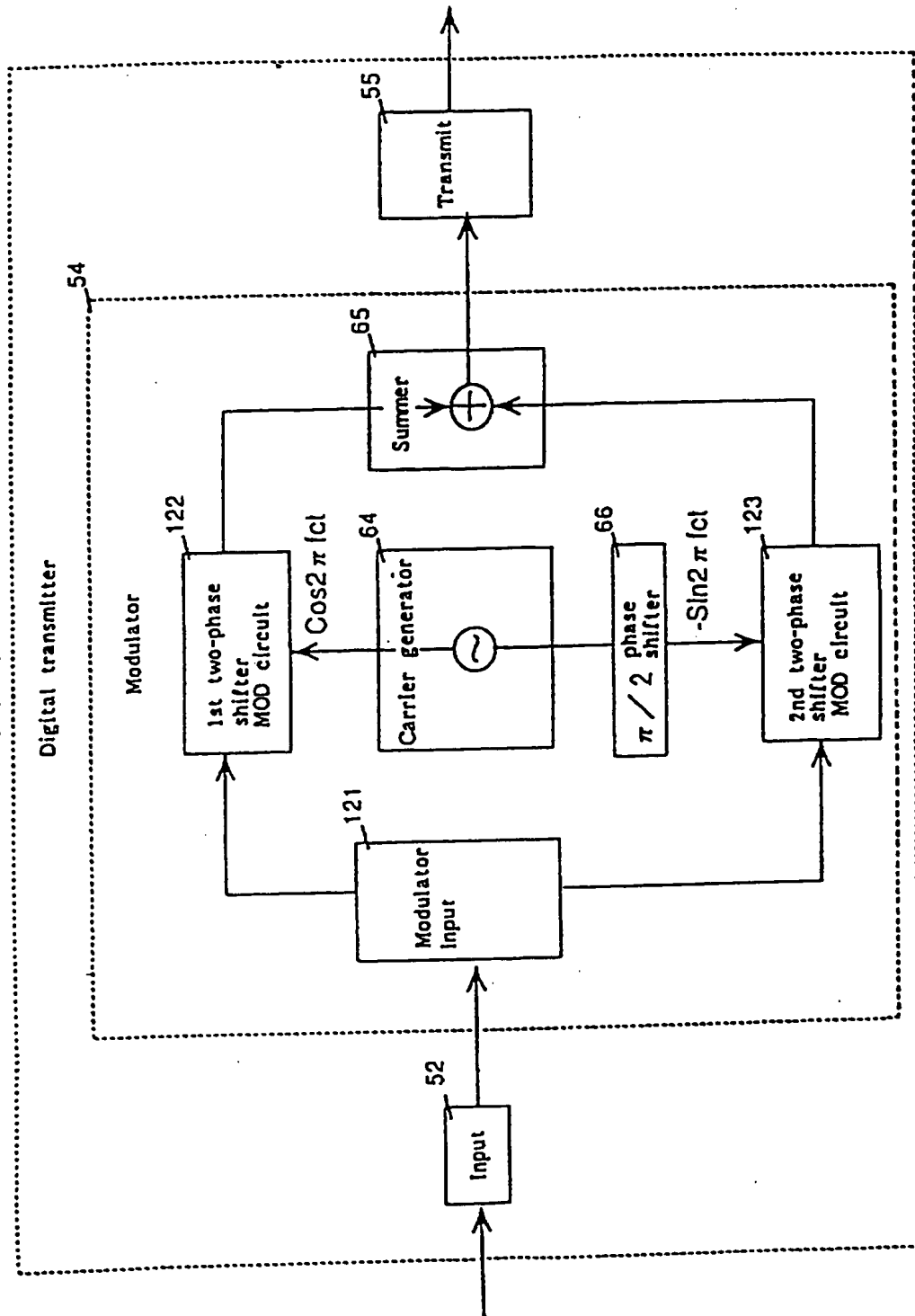


FIG. 16







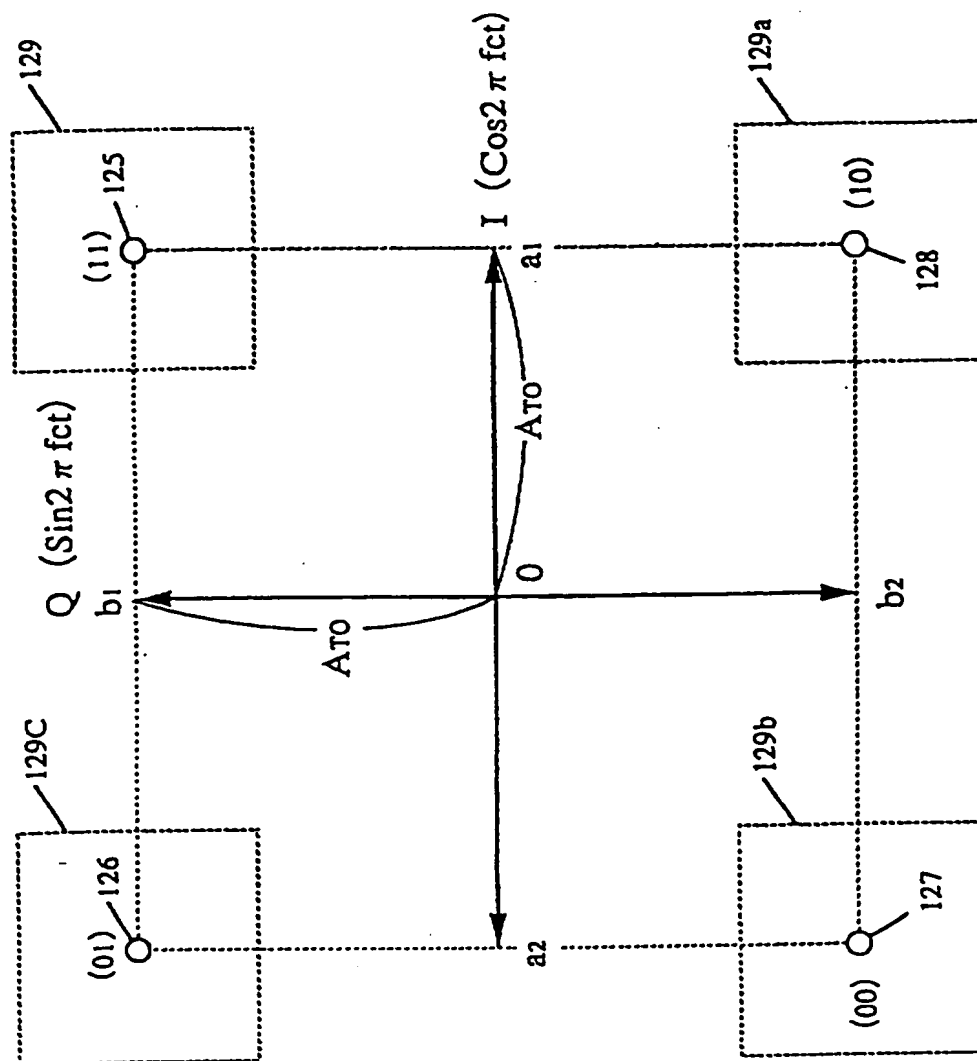
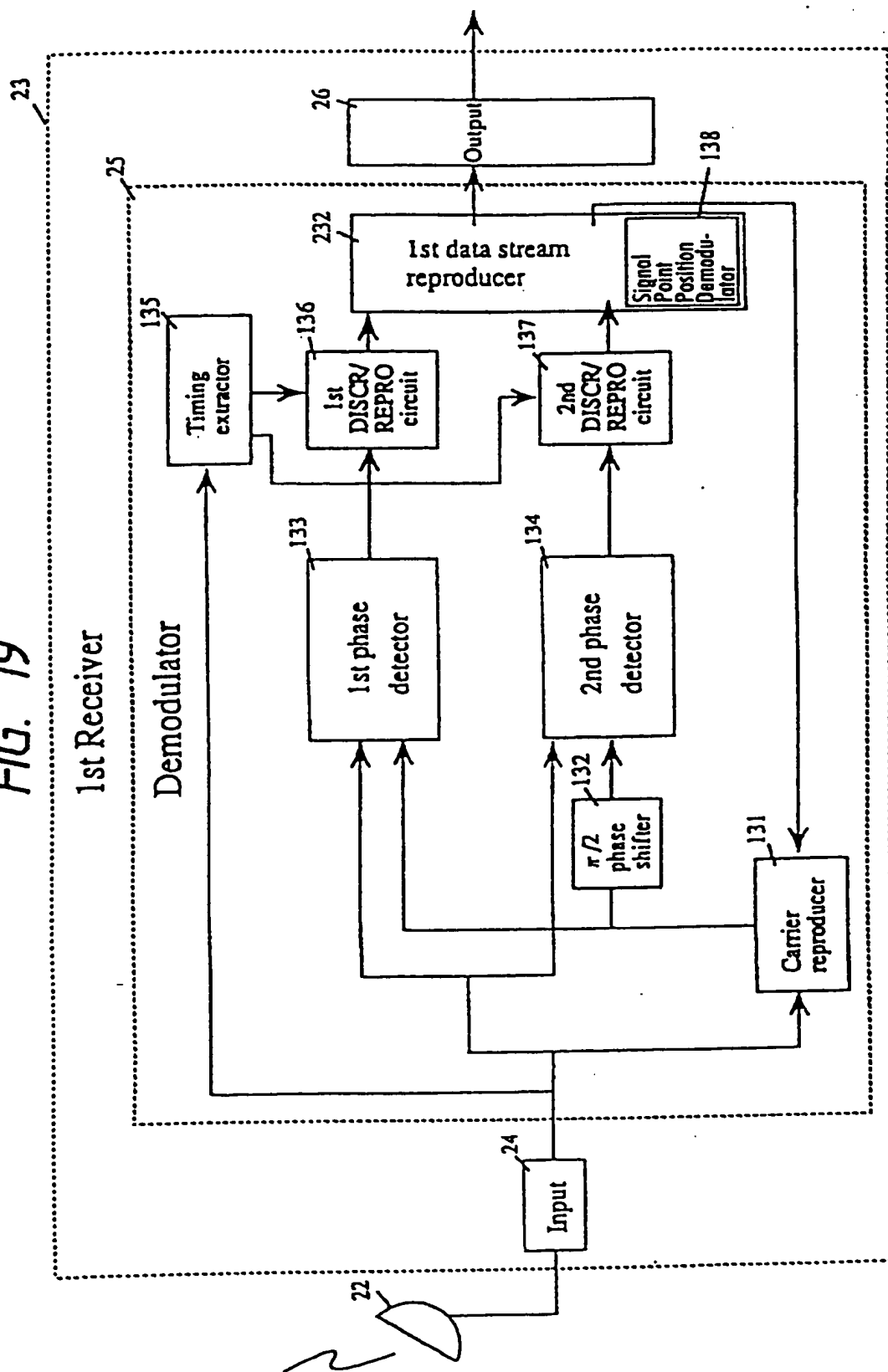
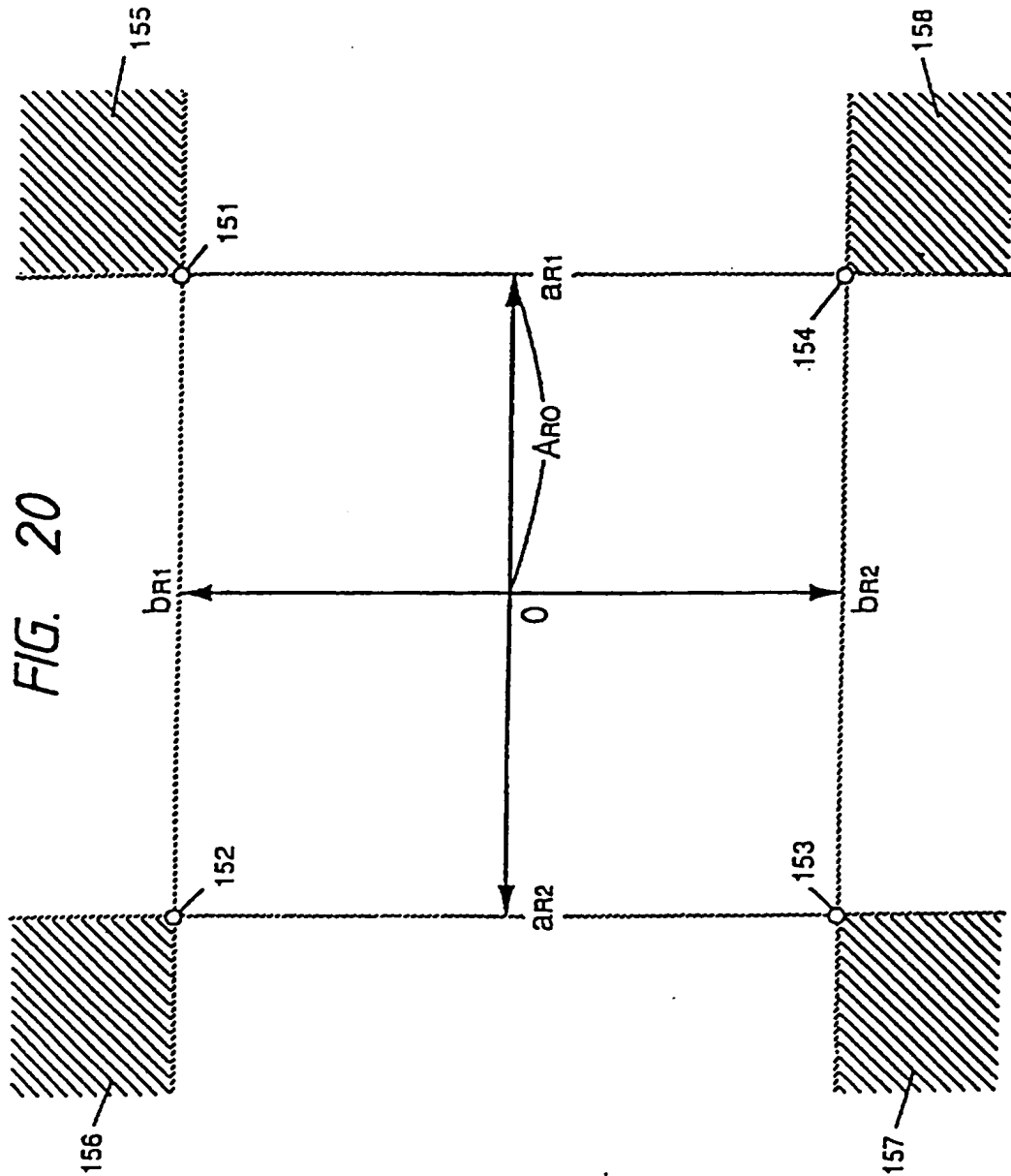


FIG. 19

1st Receiver

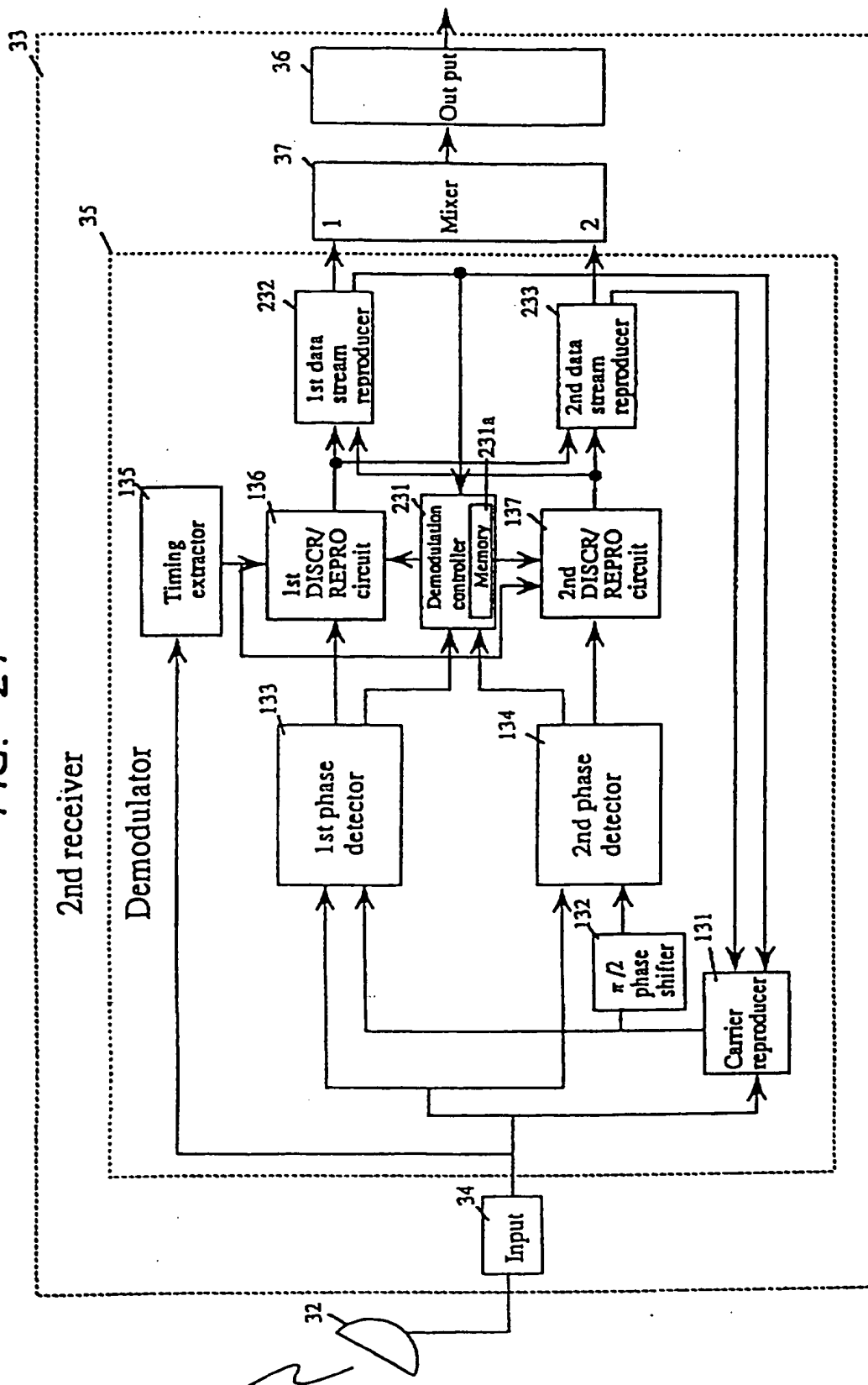
Demodulator

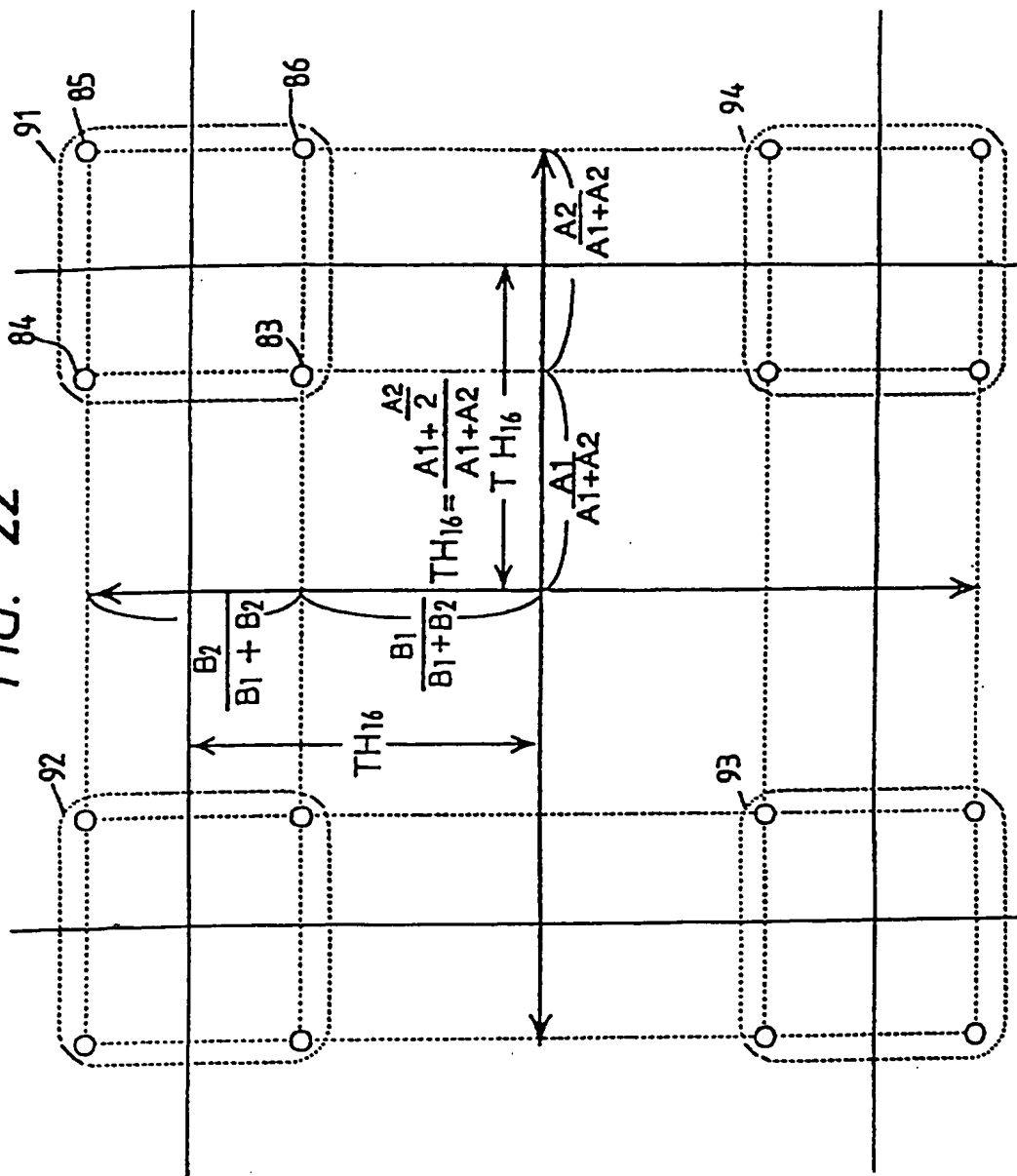


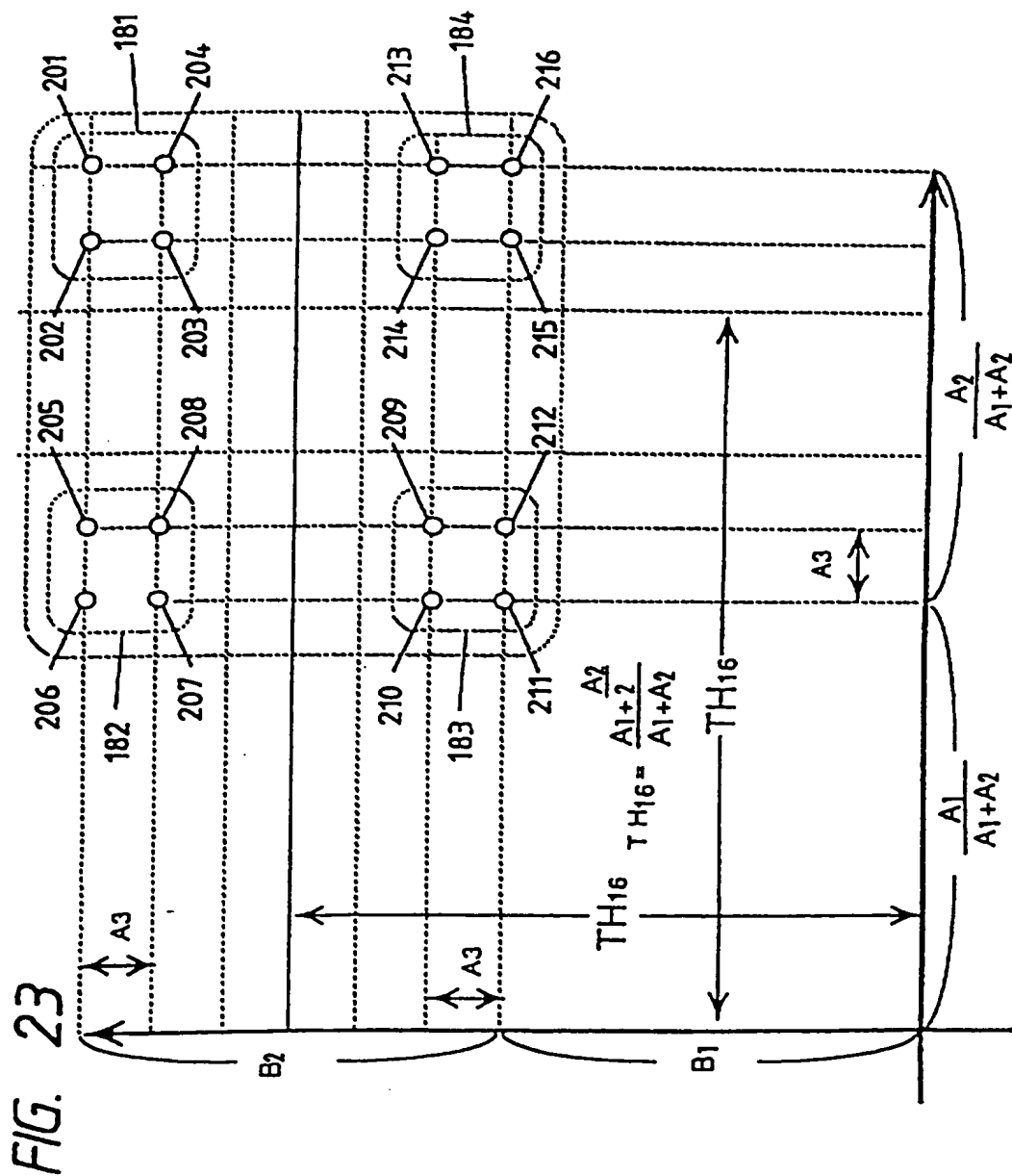


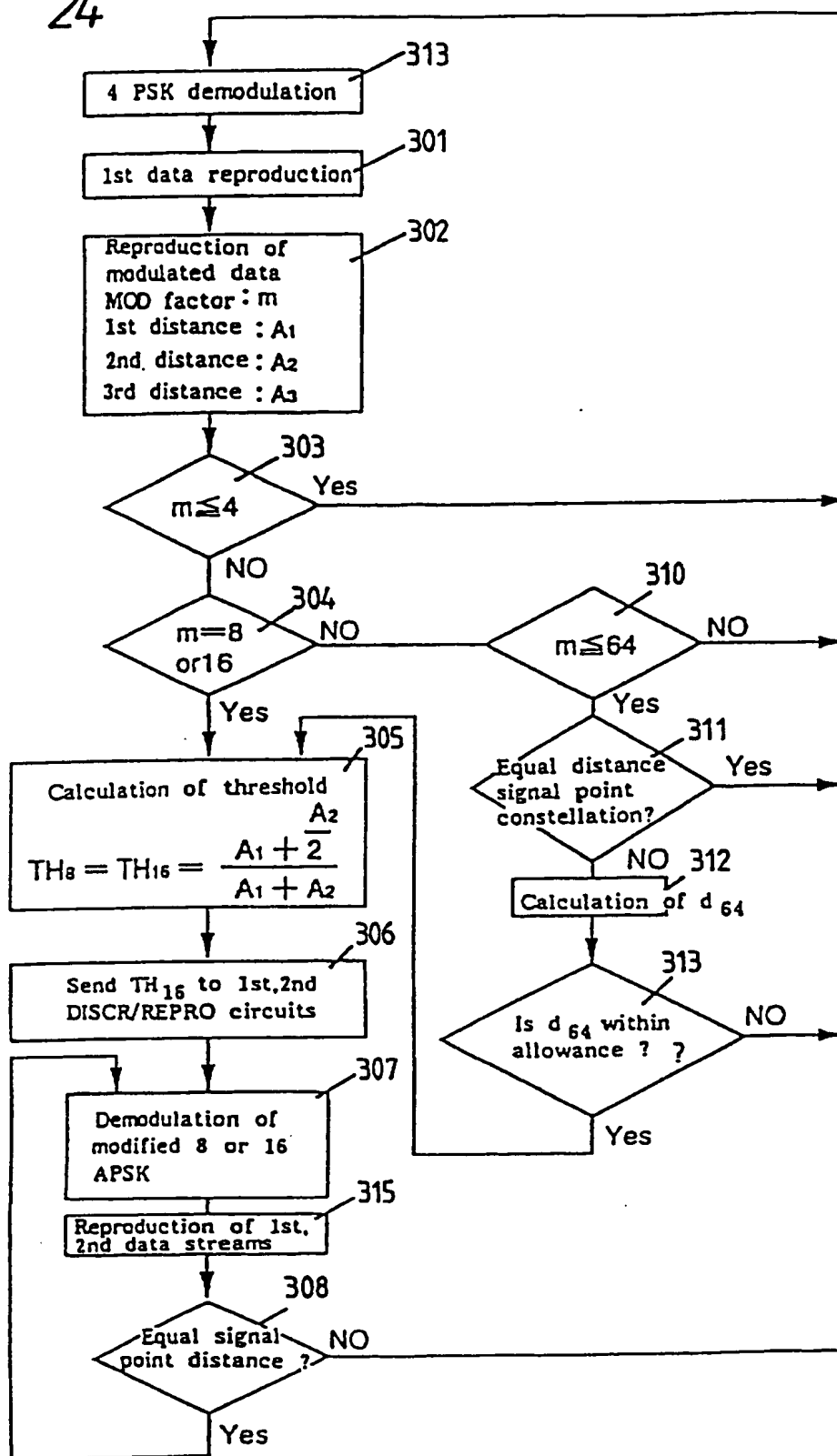
Sheet 20 of 174

FIG. 21







[illegible]



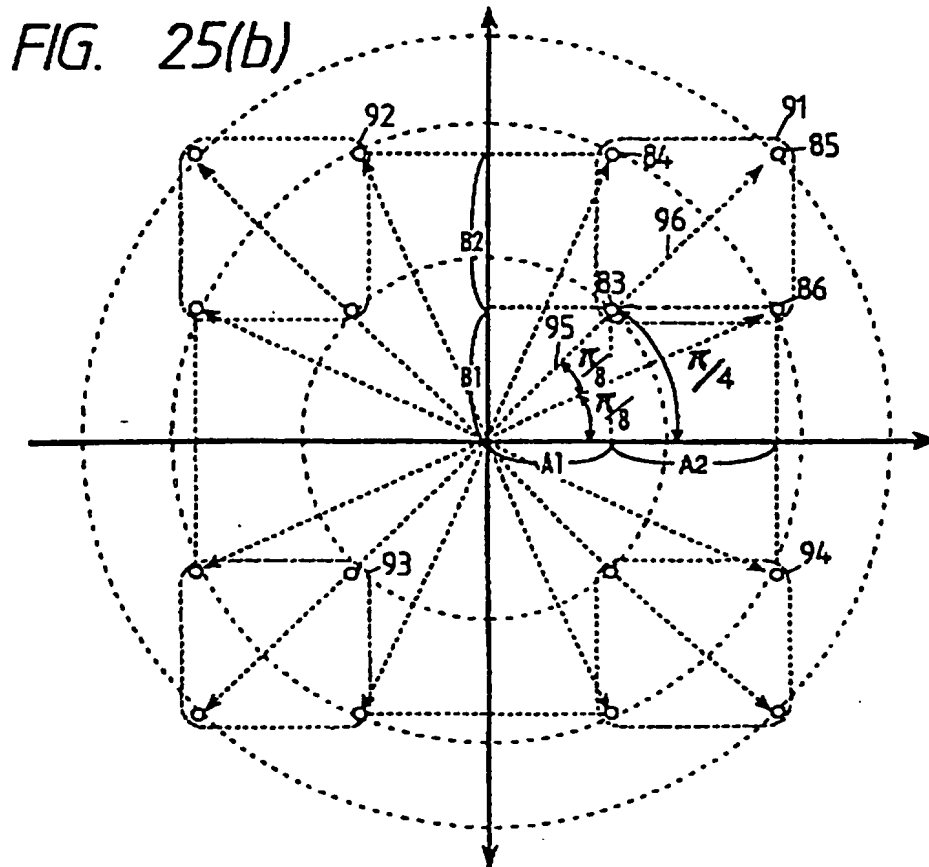
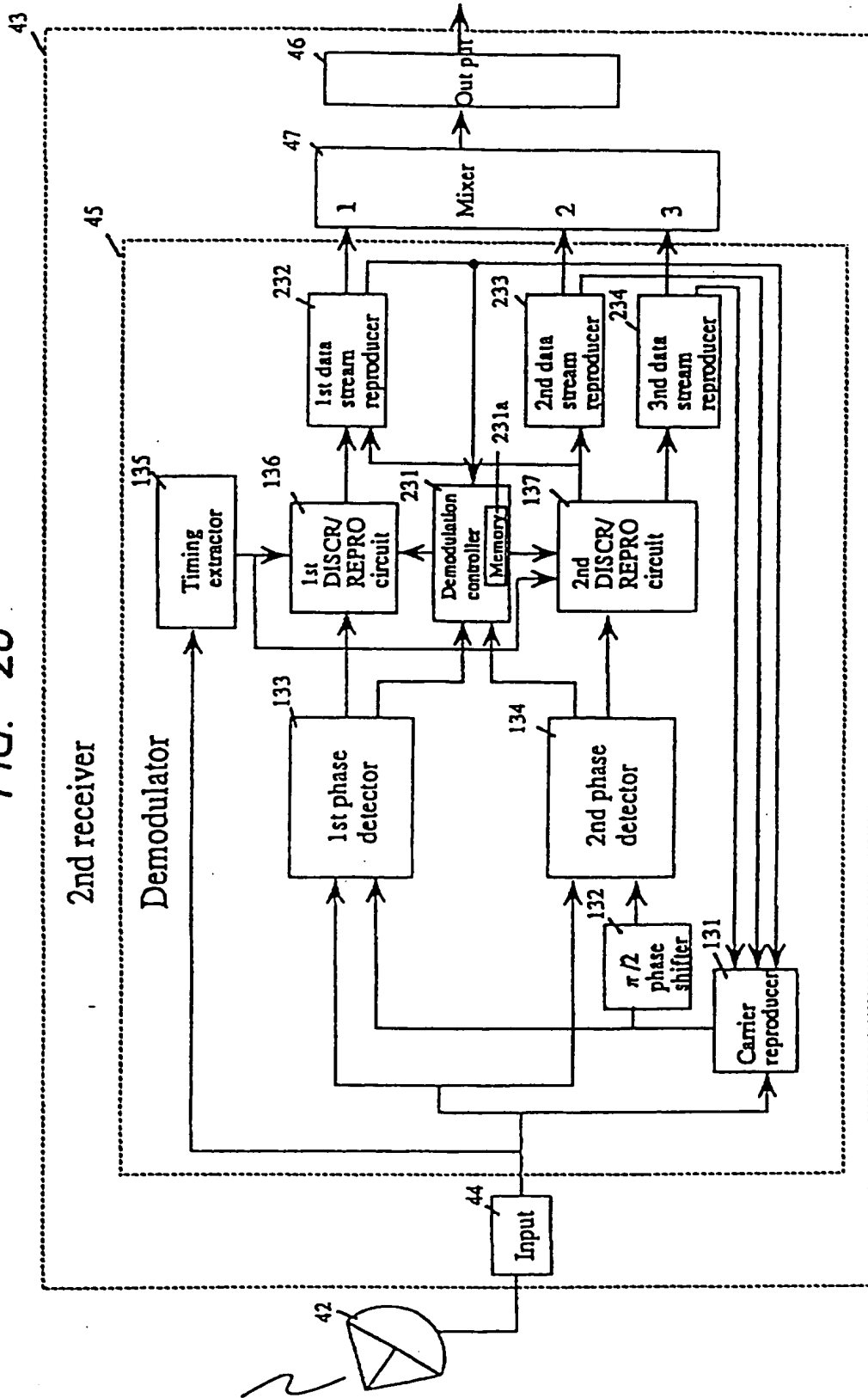
[illegible]

FIG. 26

2nd receiver

Demodulator



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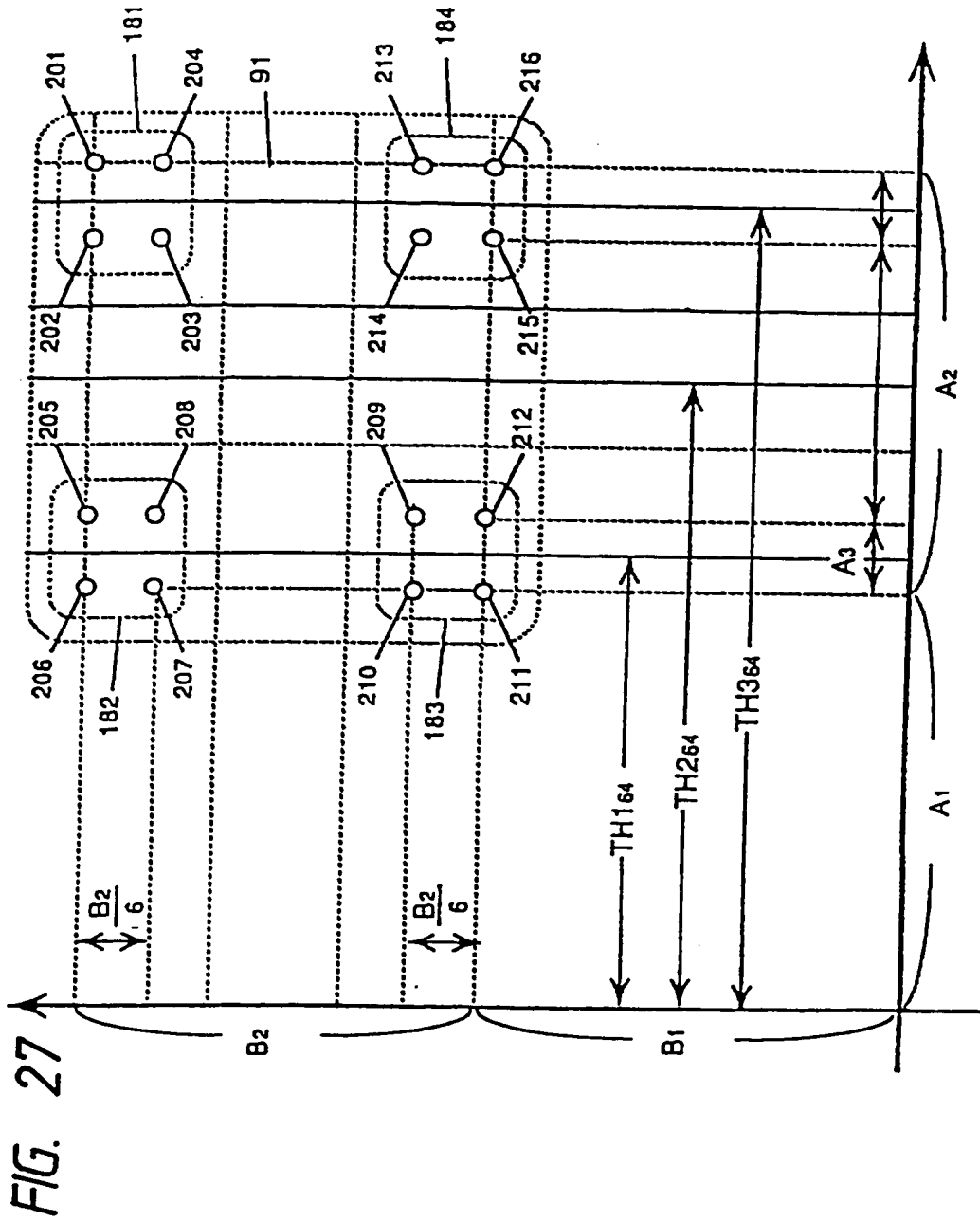
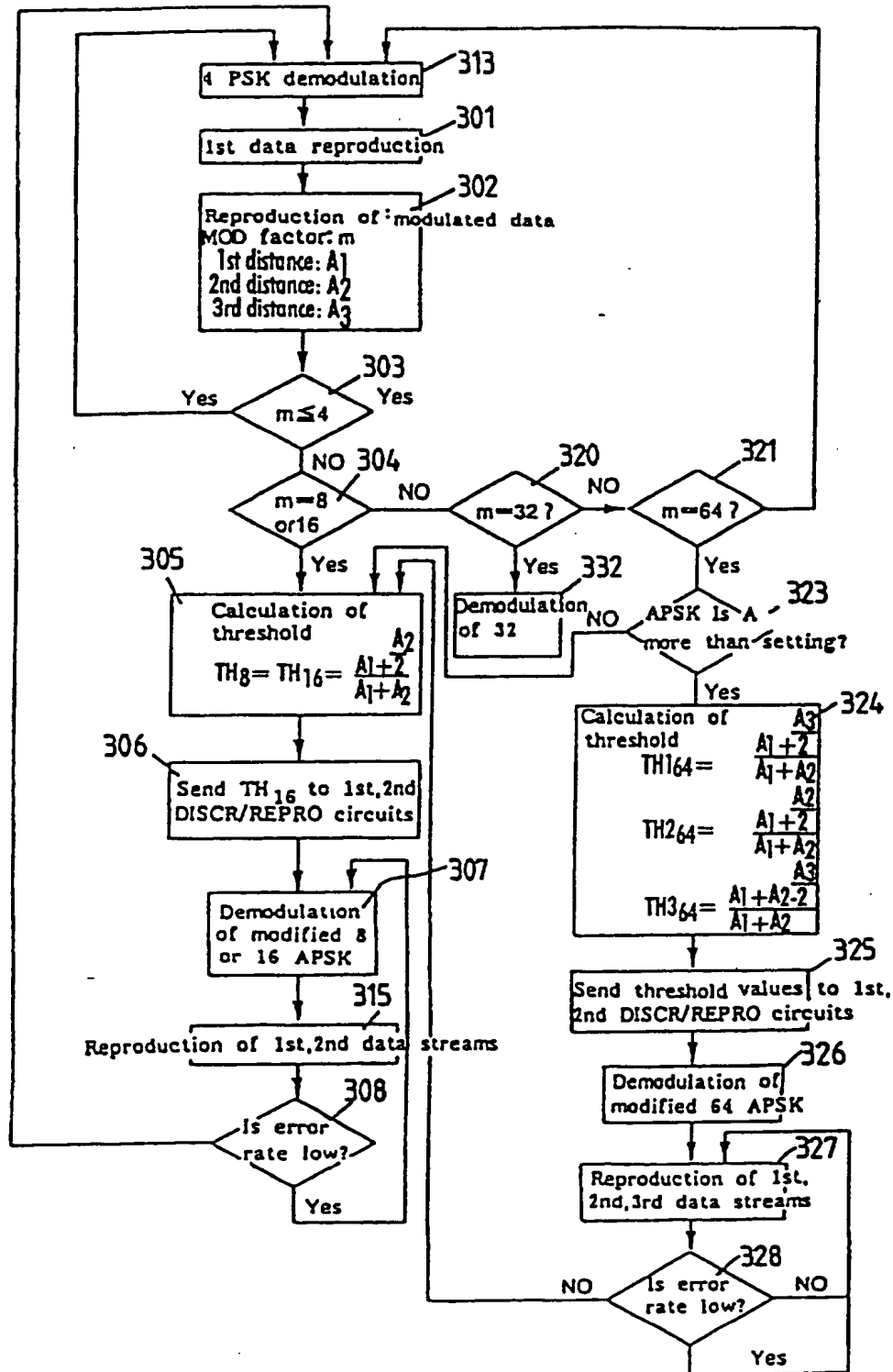


FIG. 28



000027-280004260

FIG. 29

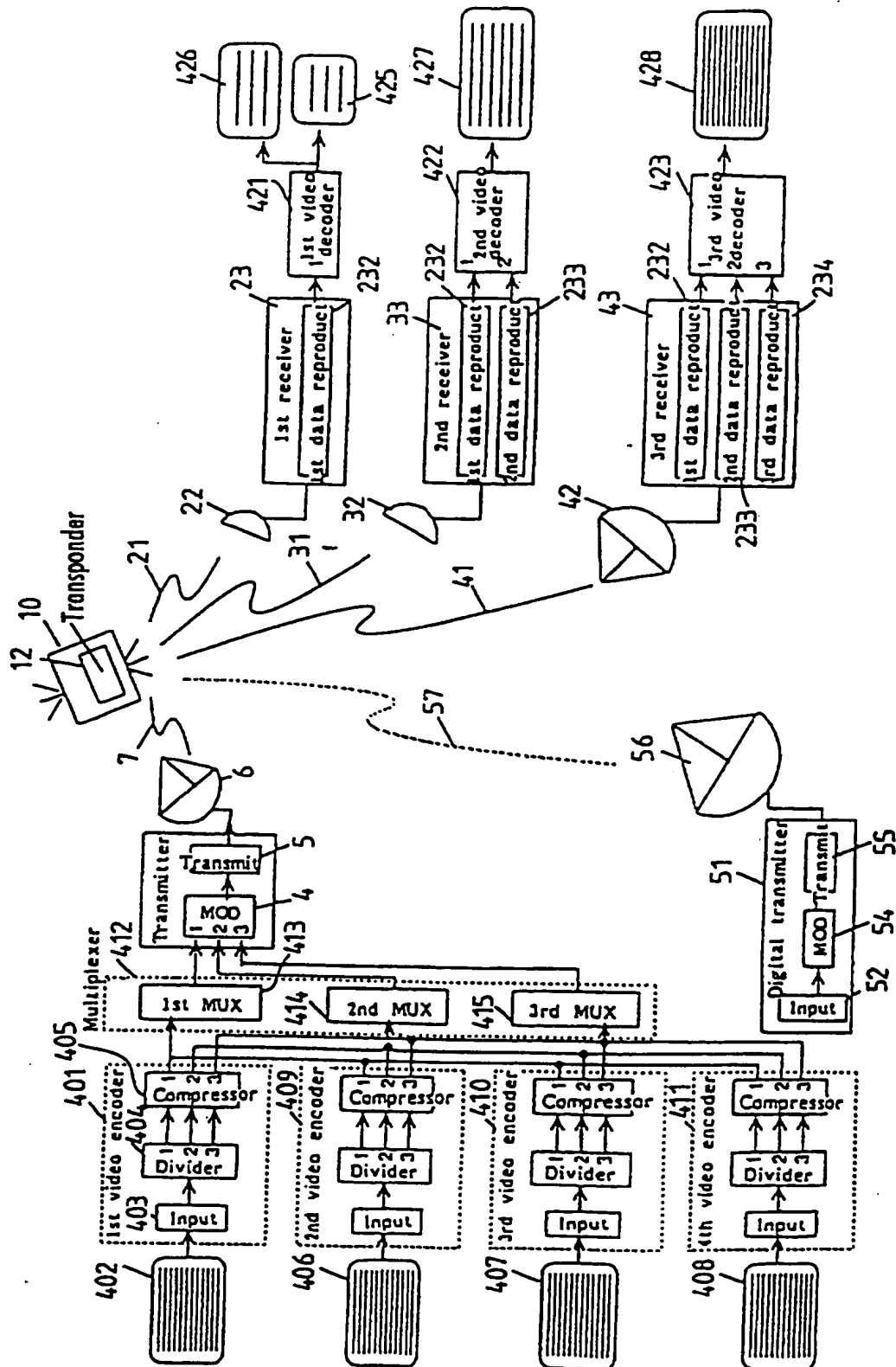
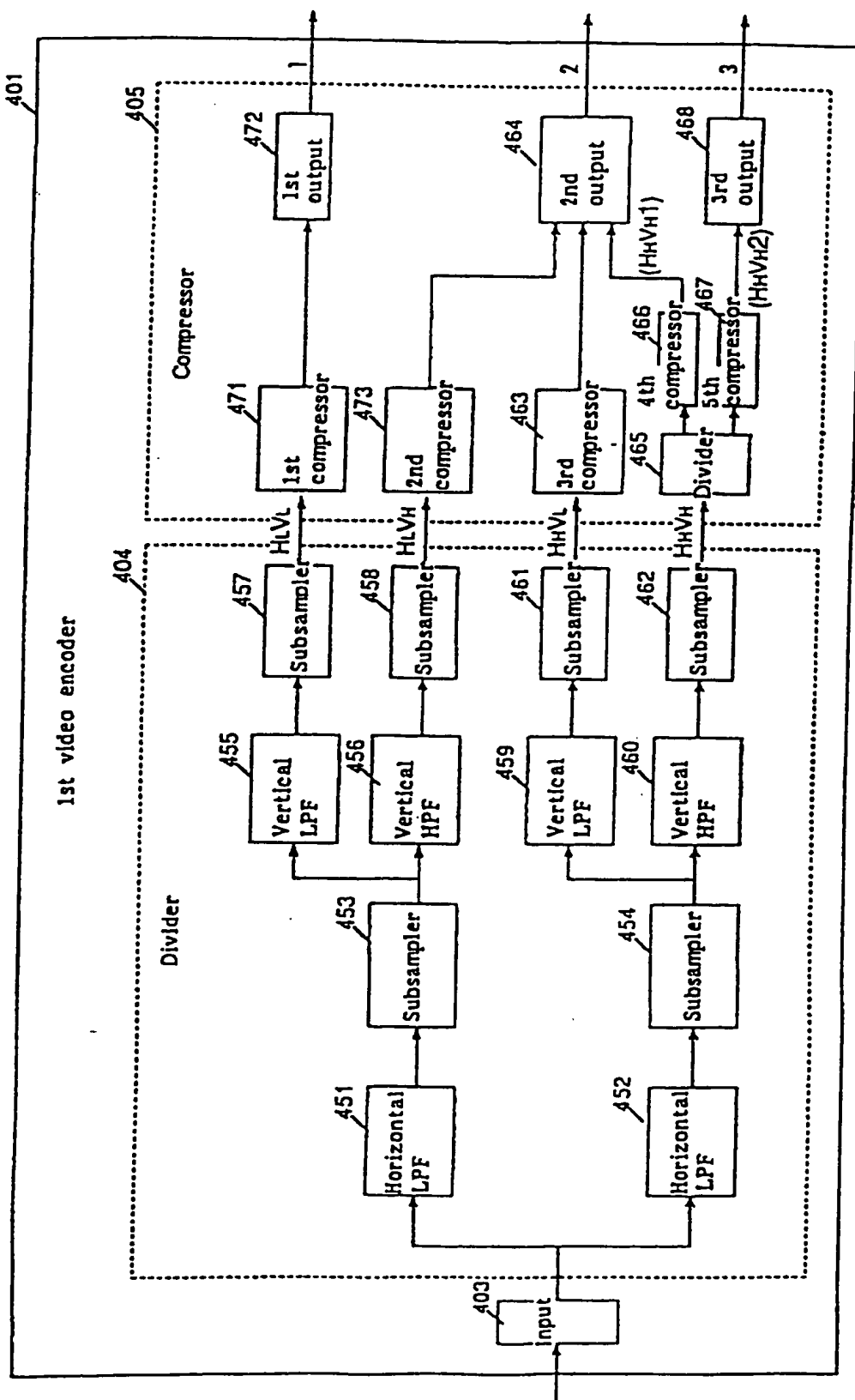
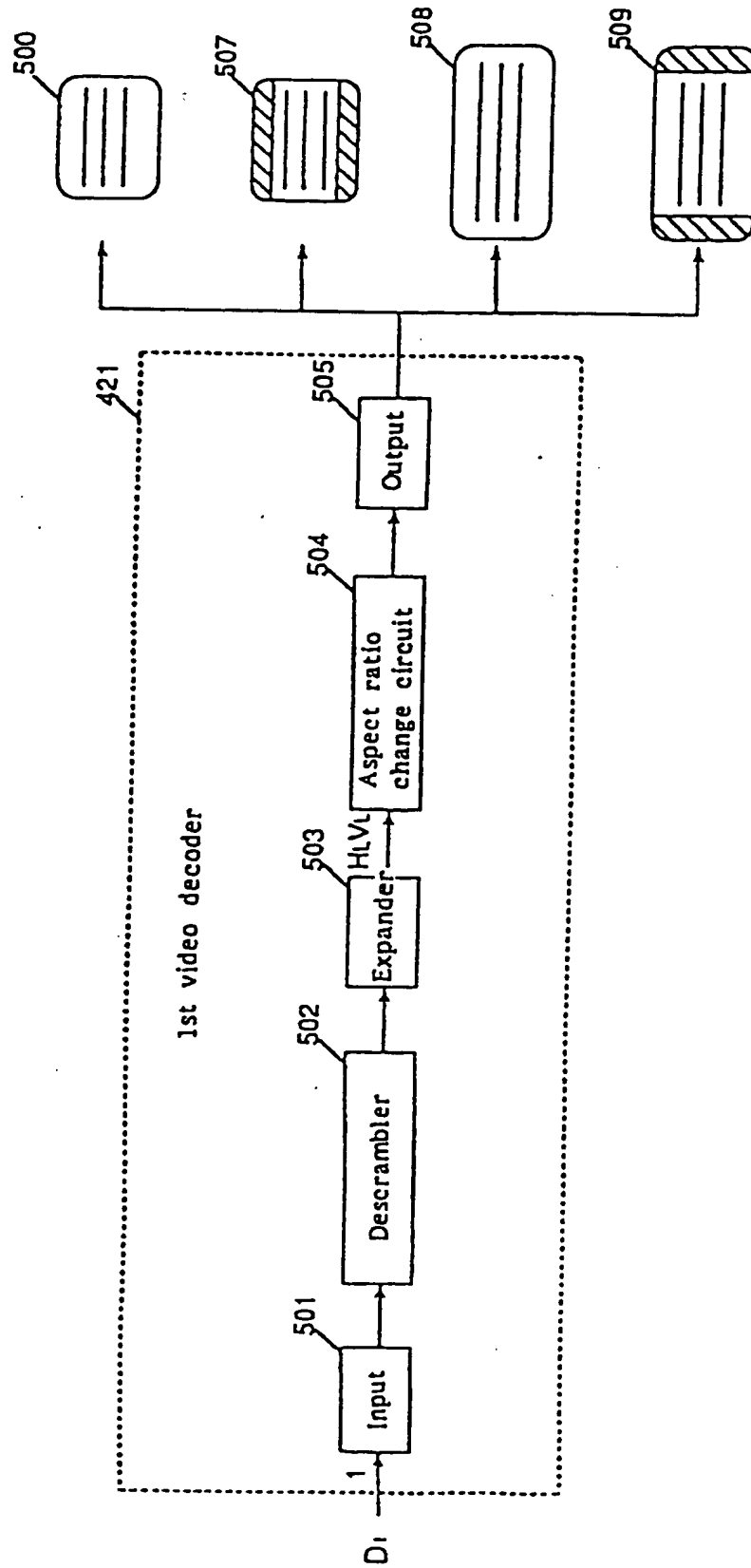


FIG. 30



0000227-830074260

FIG. 31



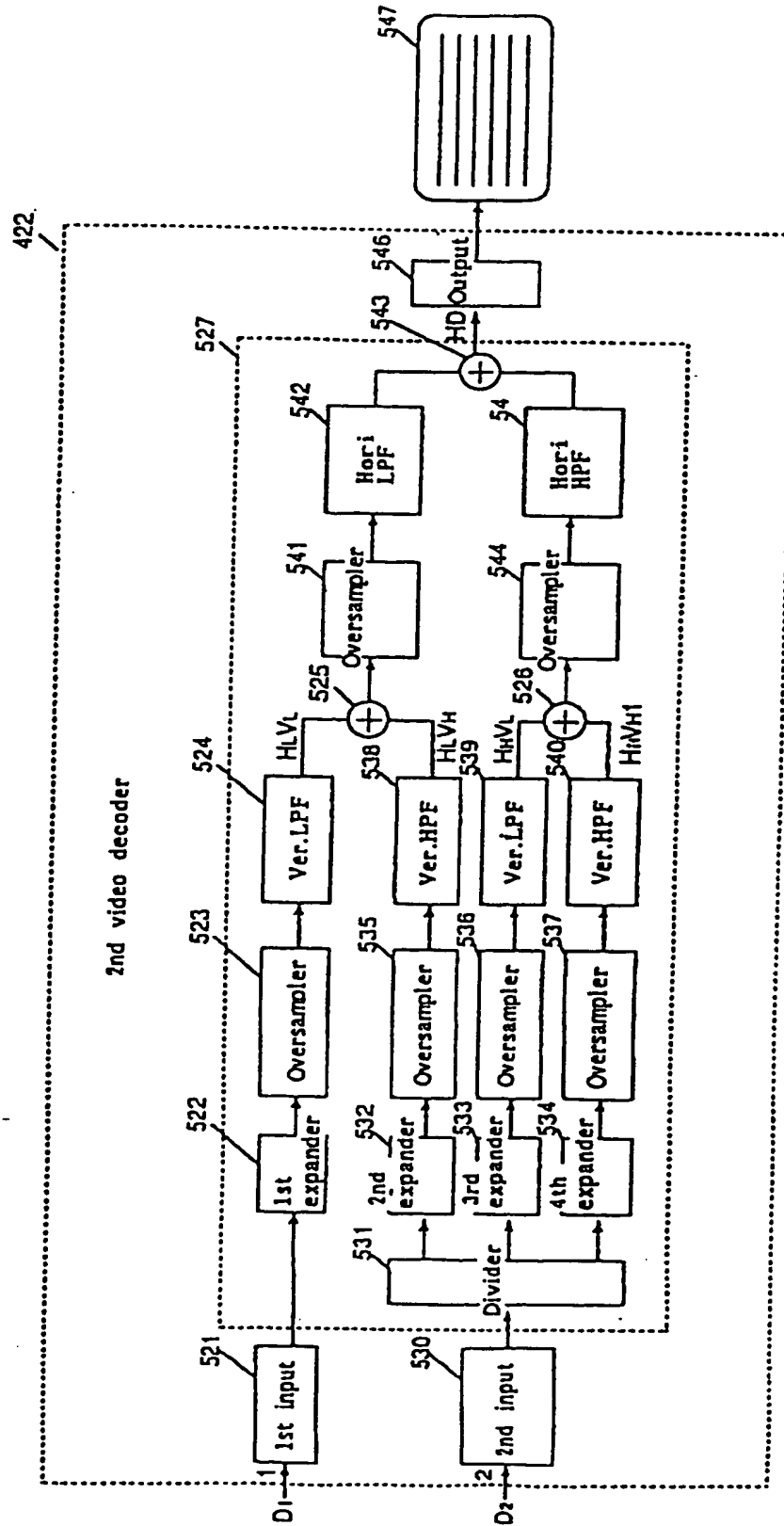
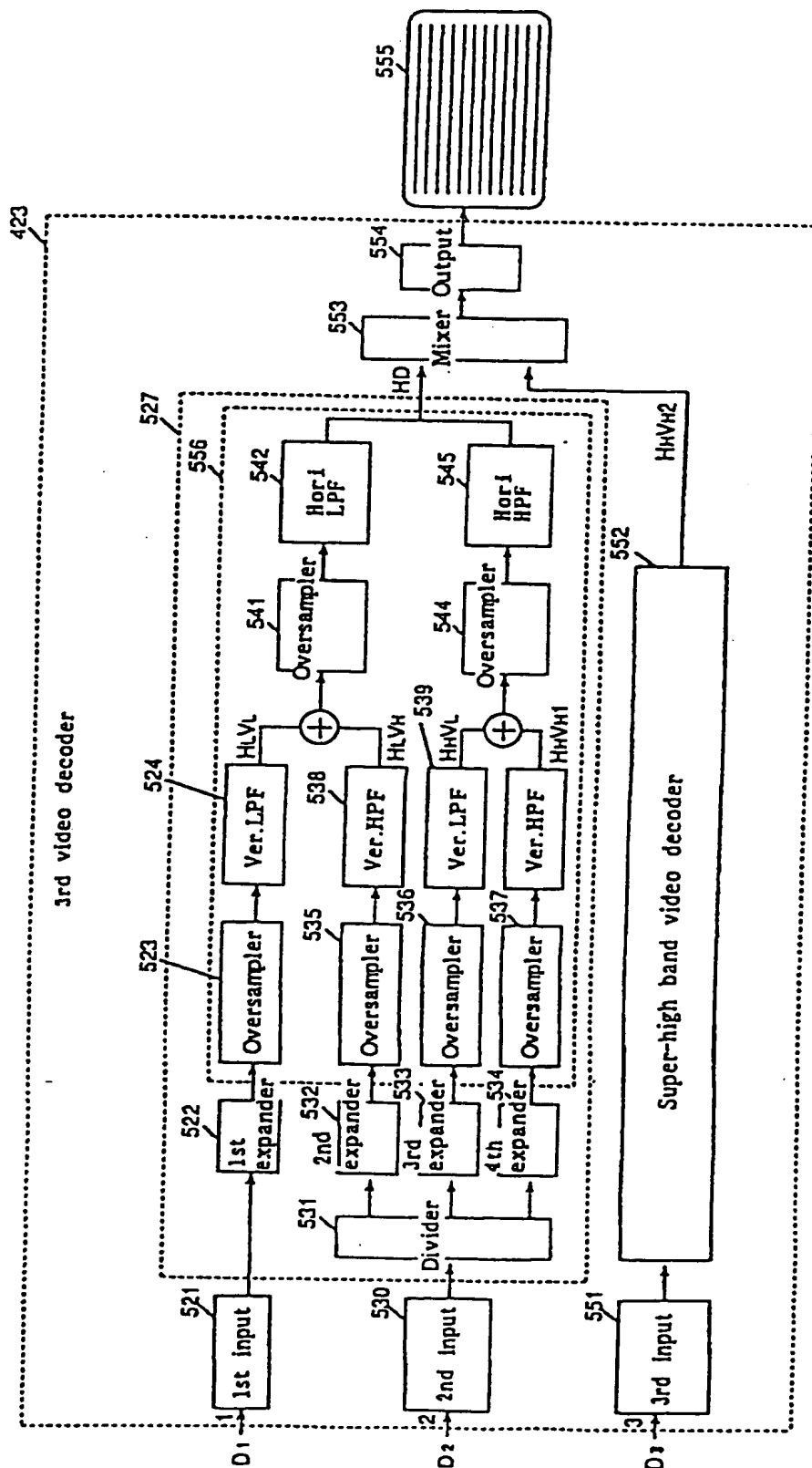
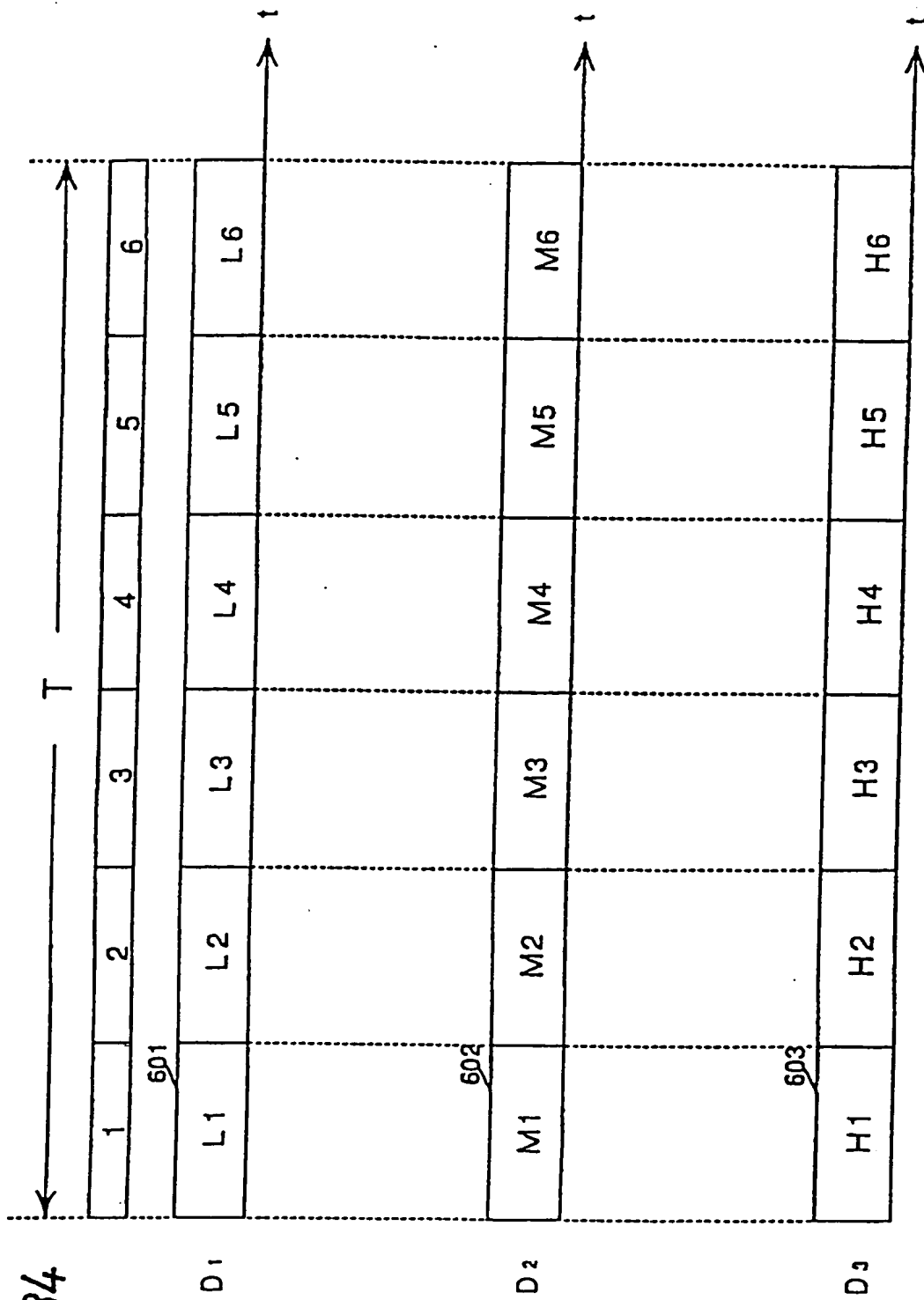


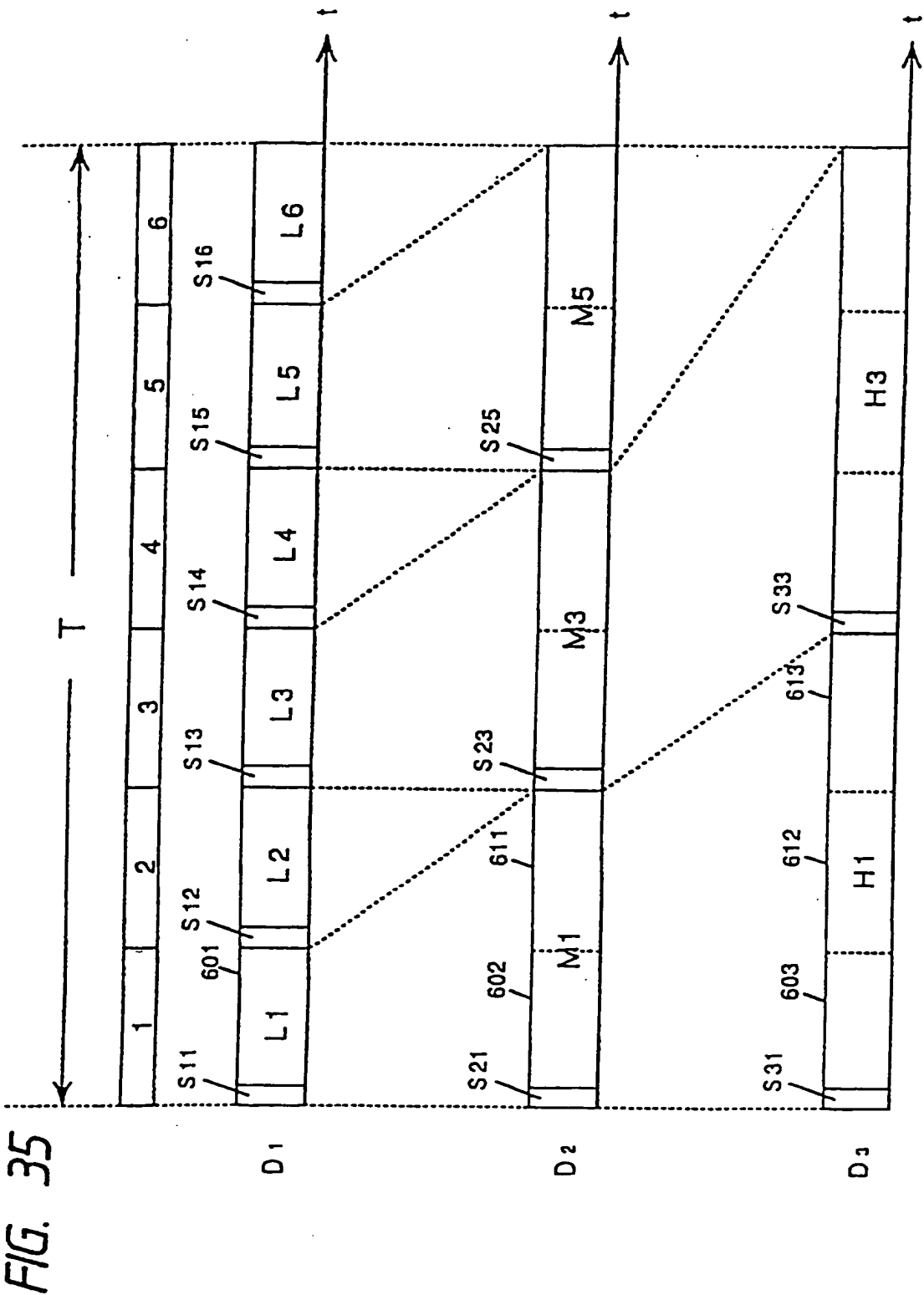


FIG. 33





Sheet 34 of 174



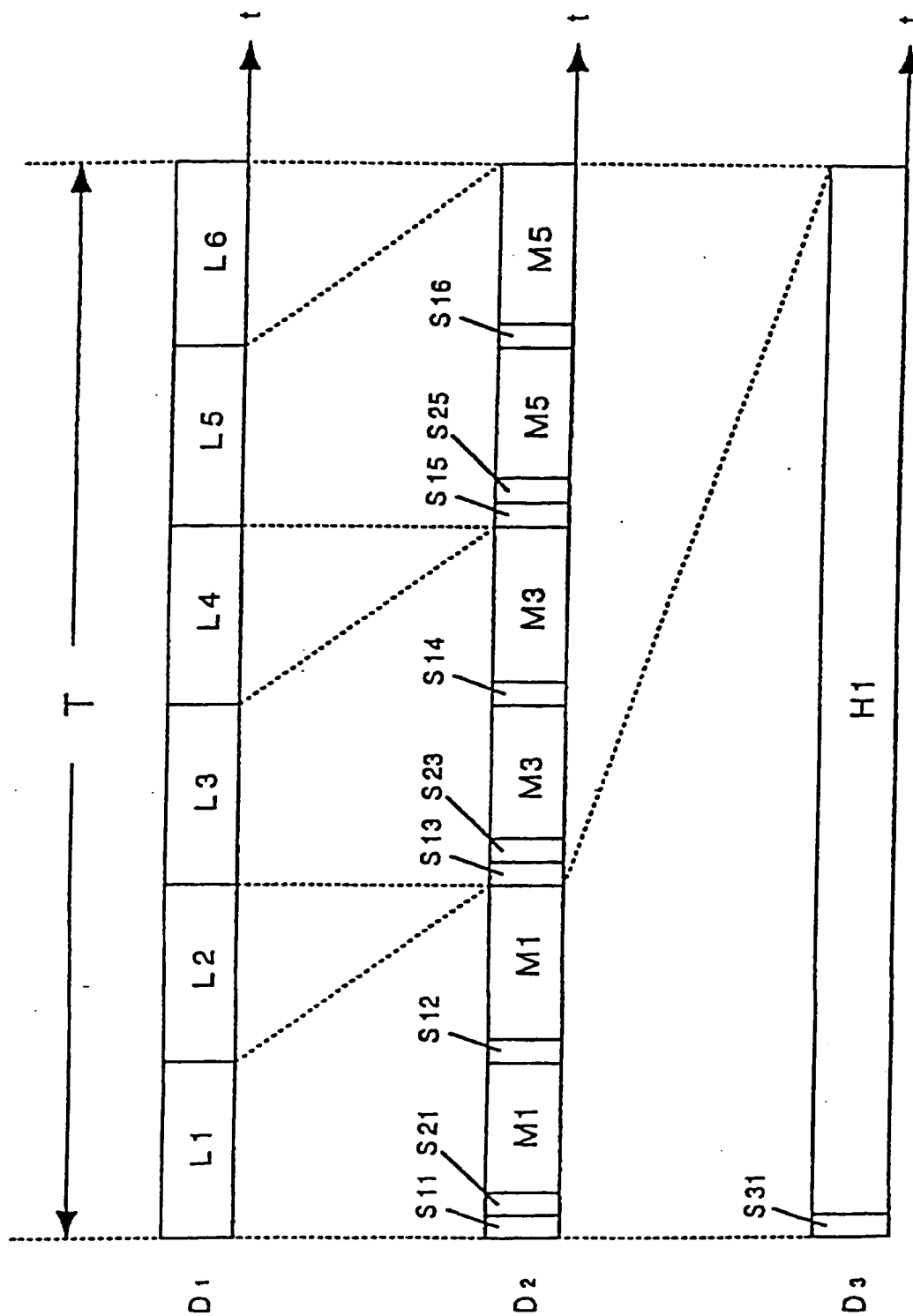
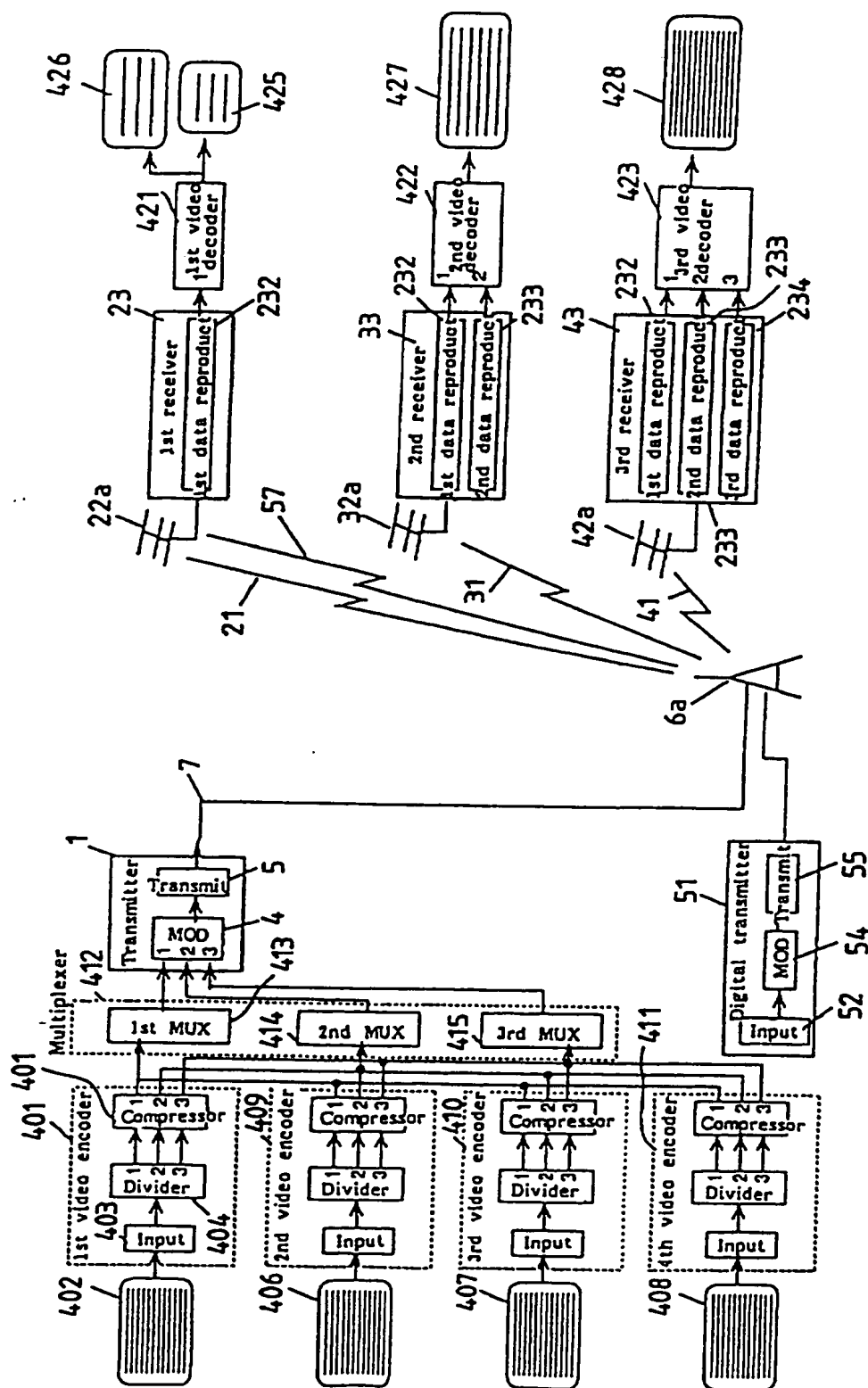
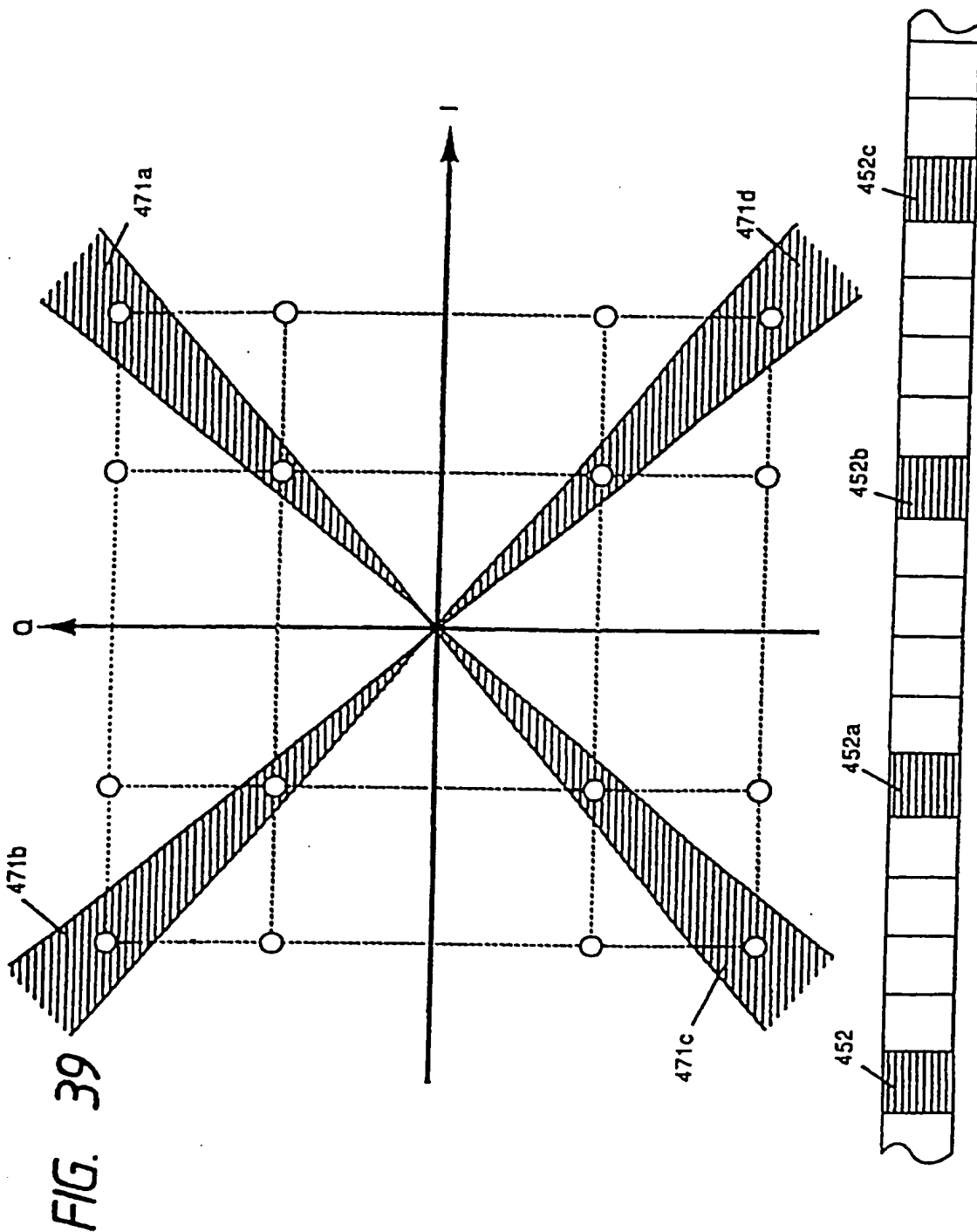


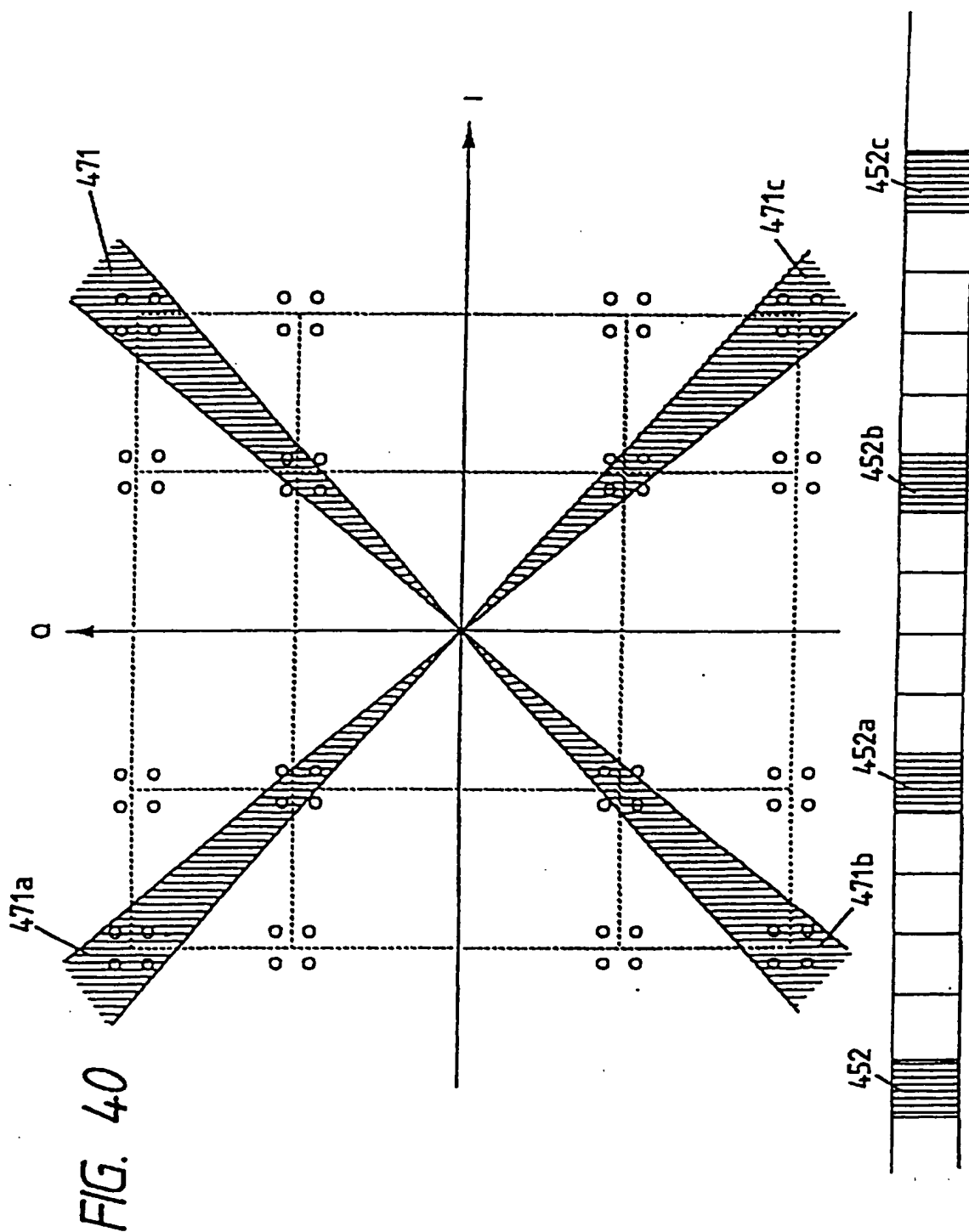
FIG. 37







000221-25001450



000001-33007450



FIG. 41

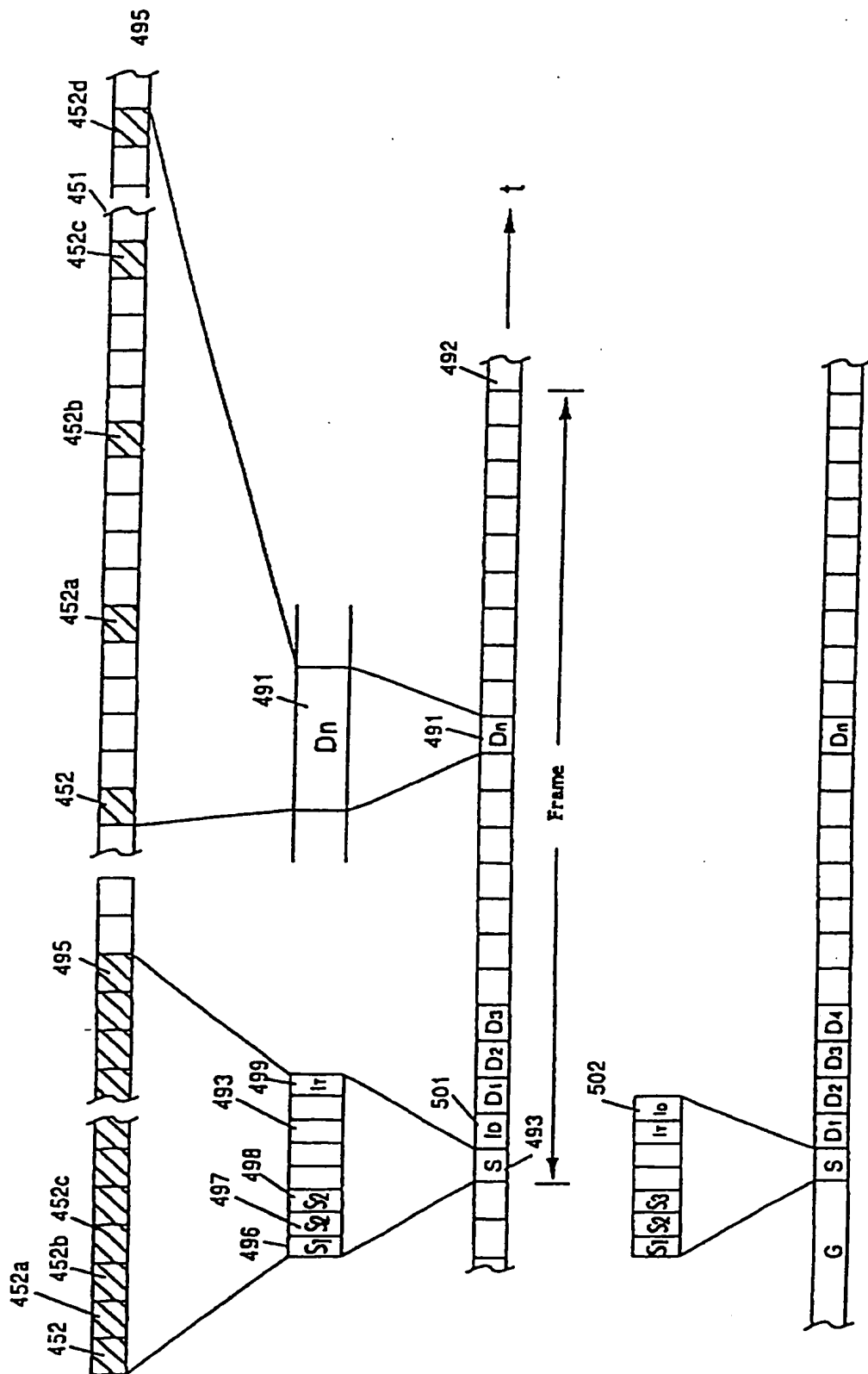
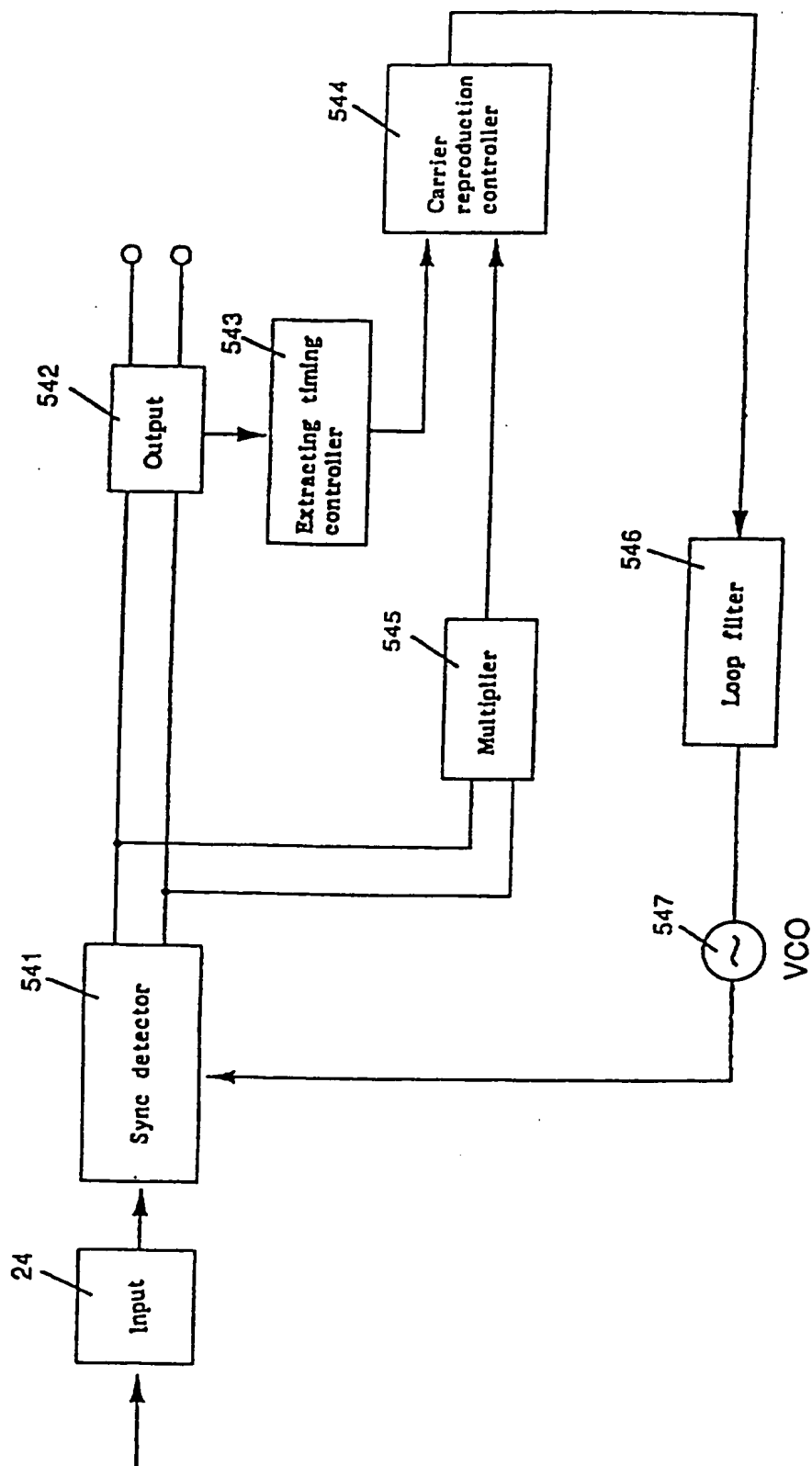




FIG. 43



DocId: 33004260

FIG. 44

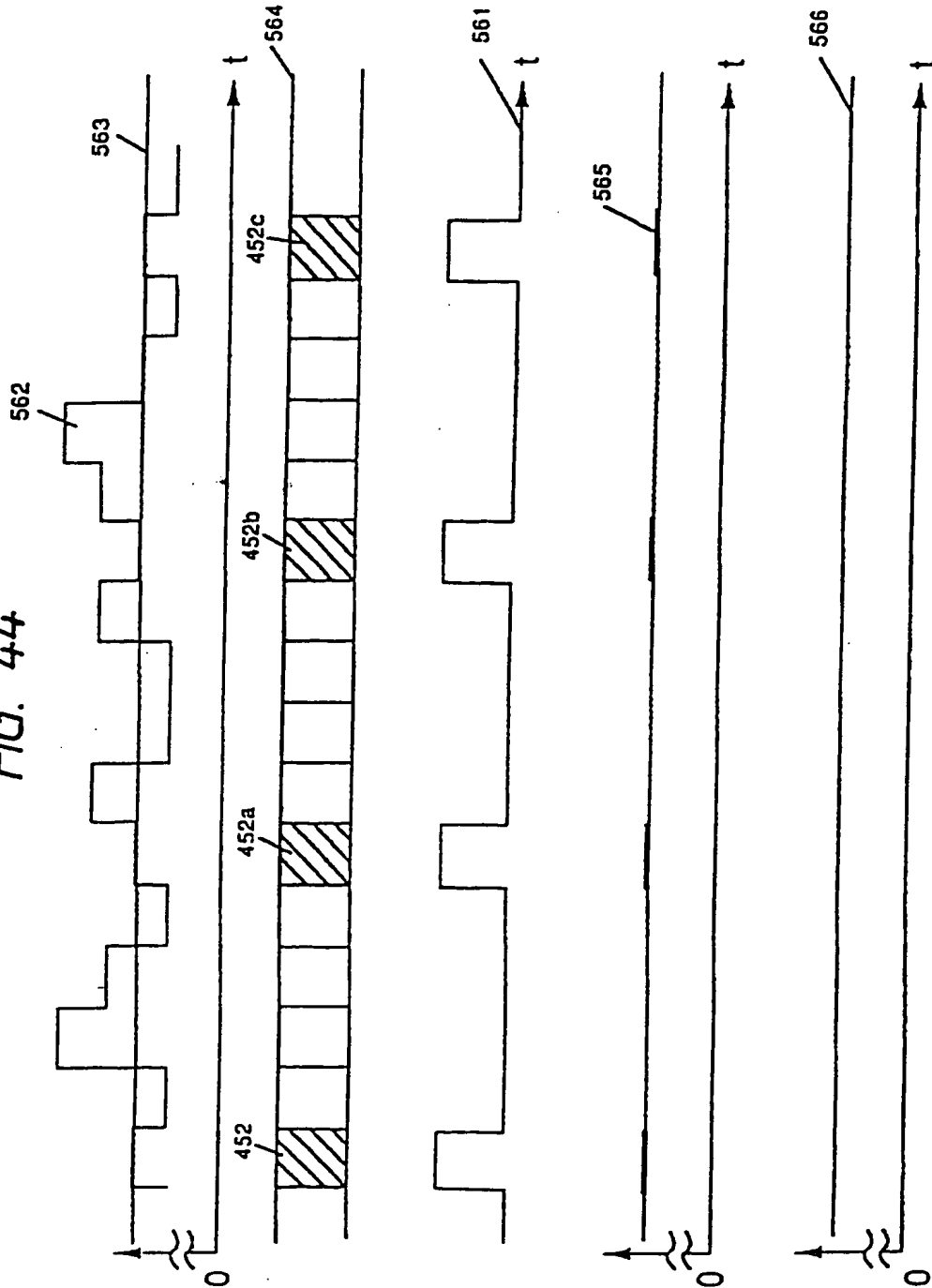
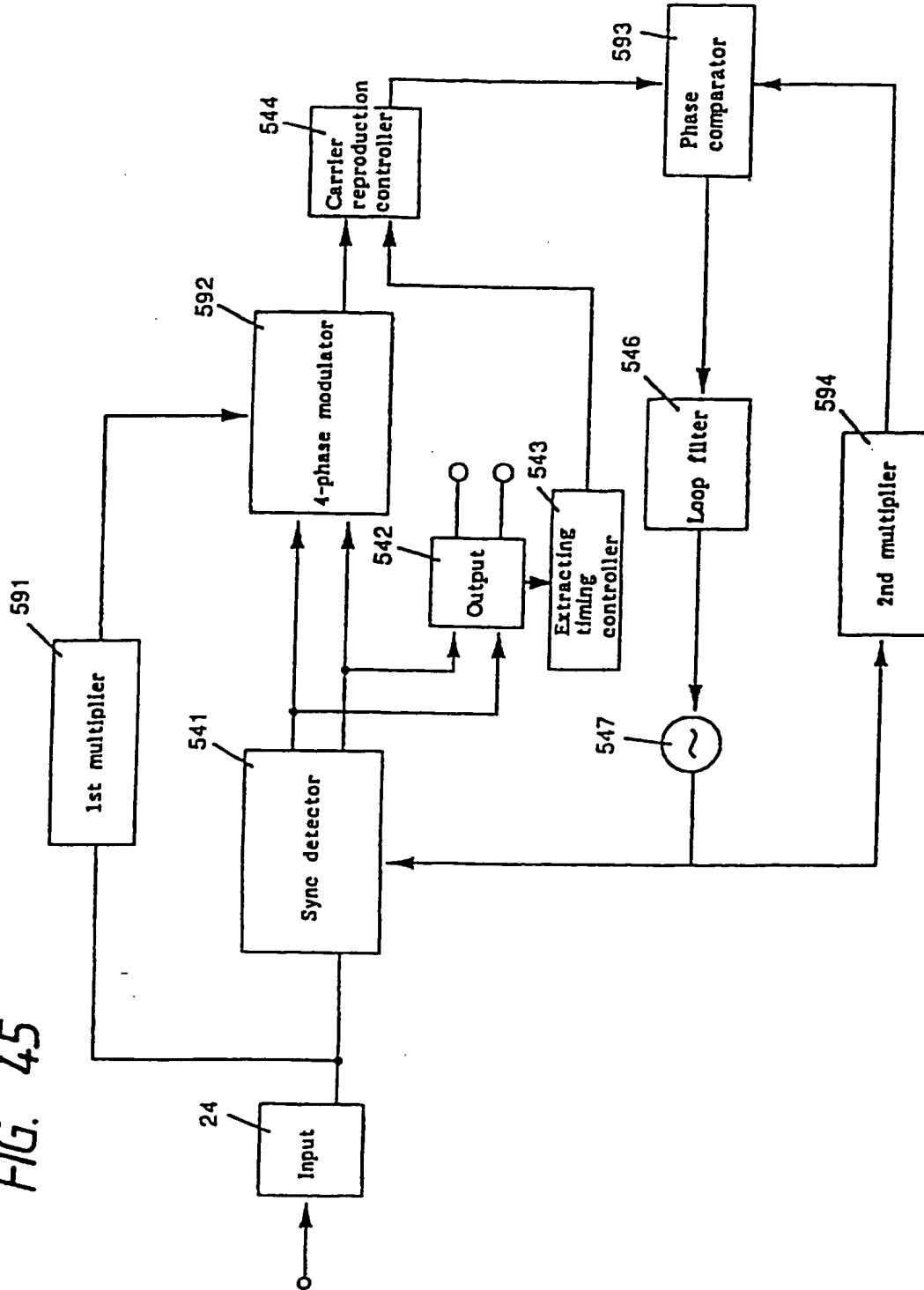


FIG. 45



DocId: 3304260

FIG. 46

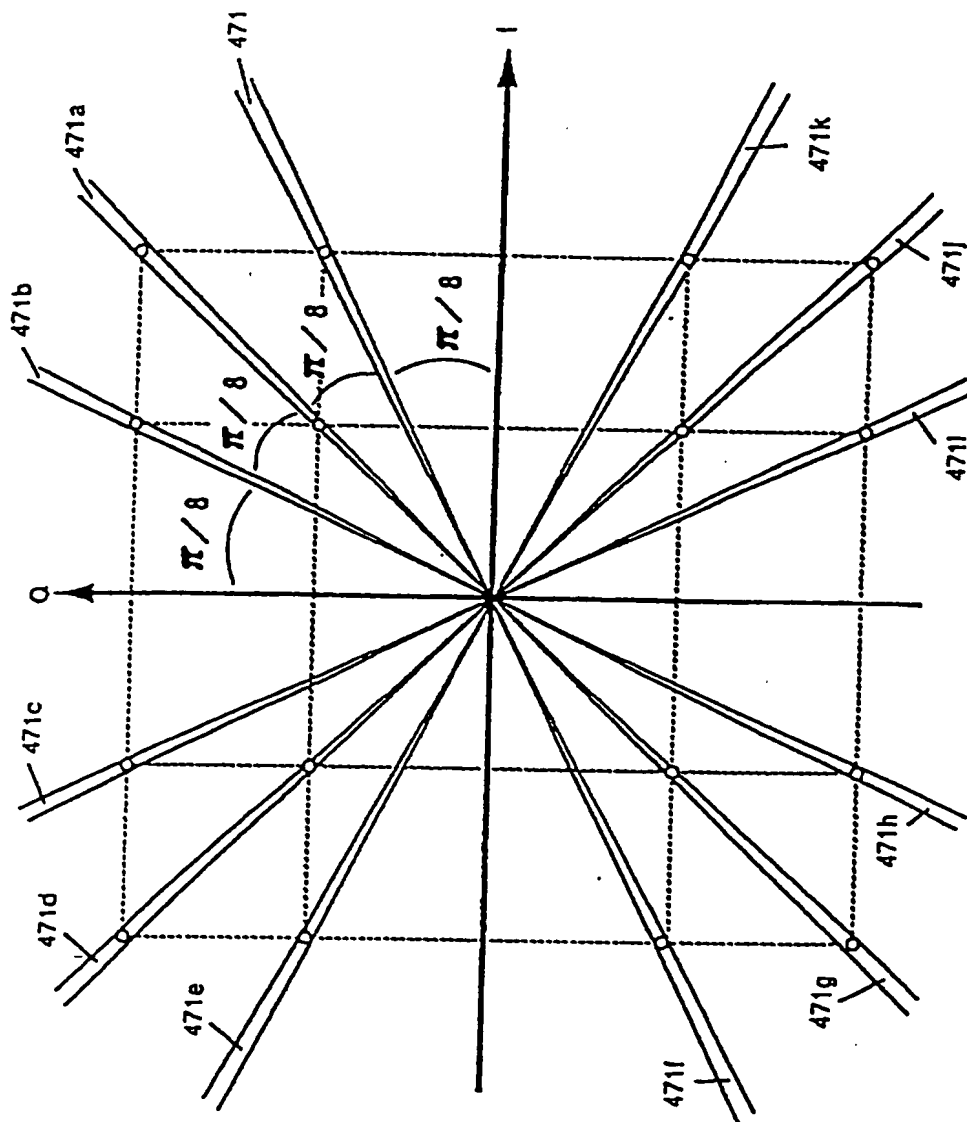
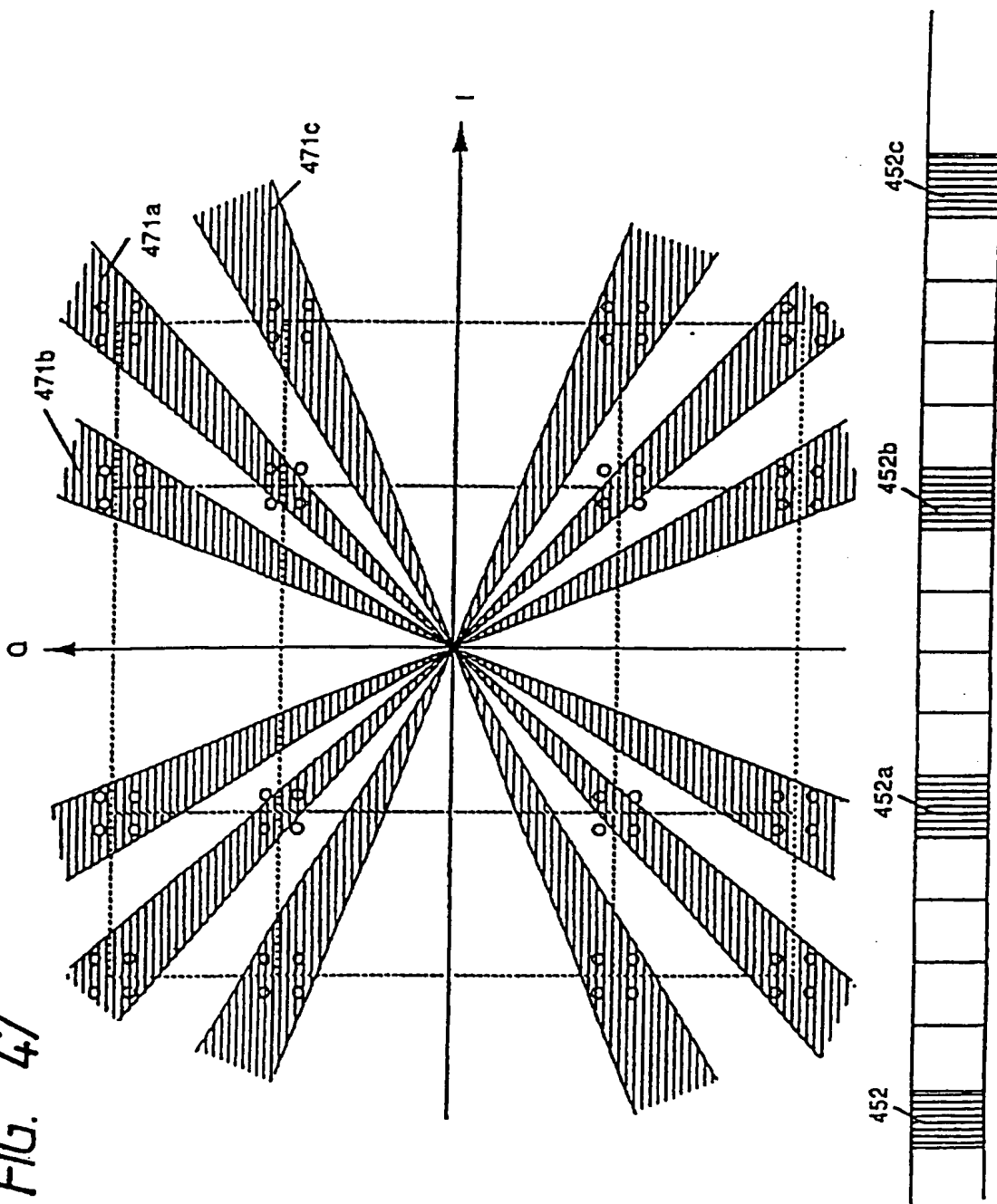
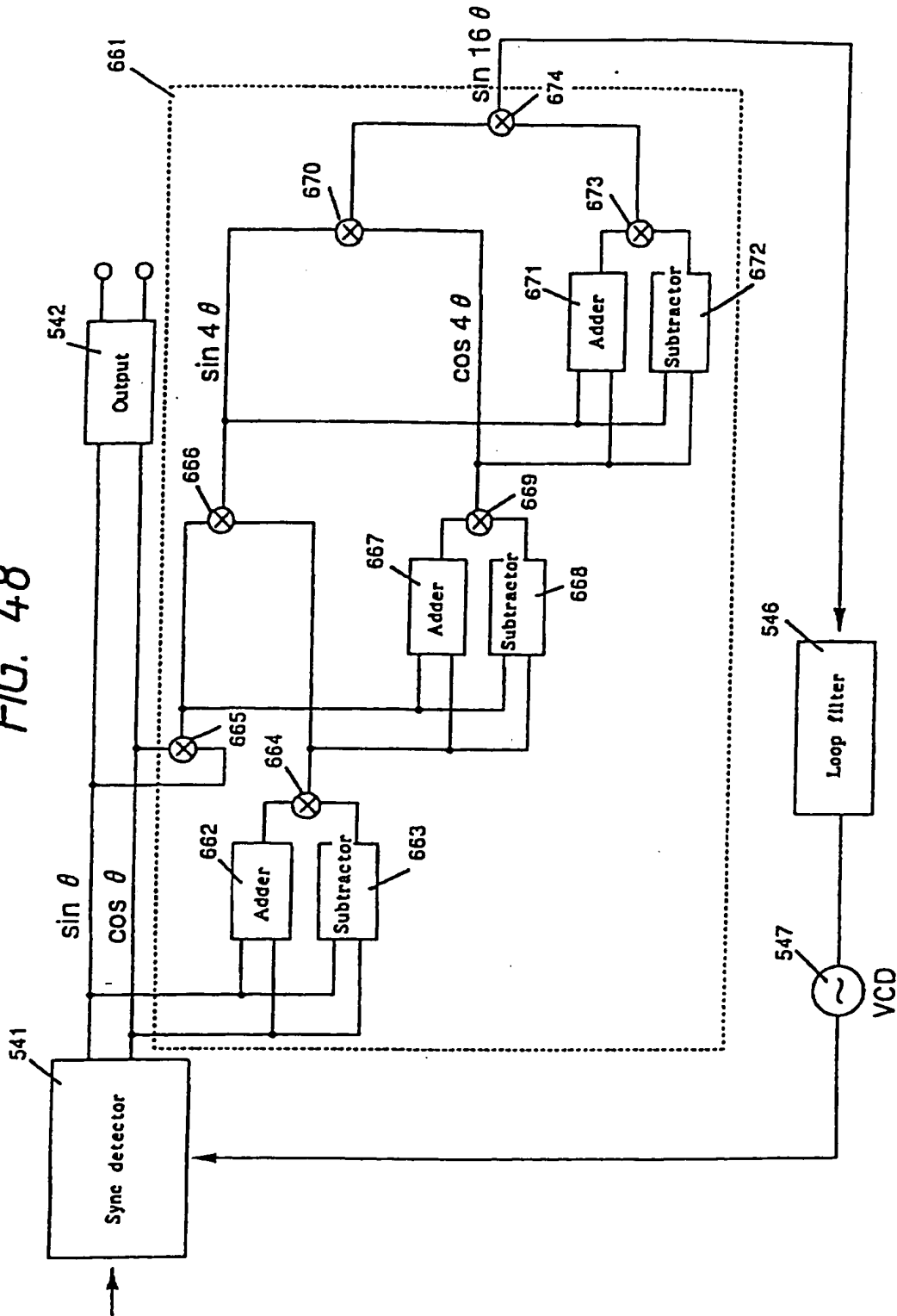


FIG. 47



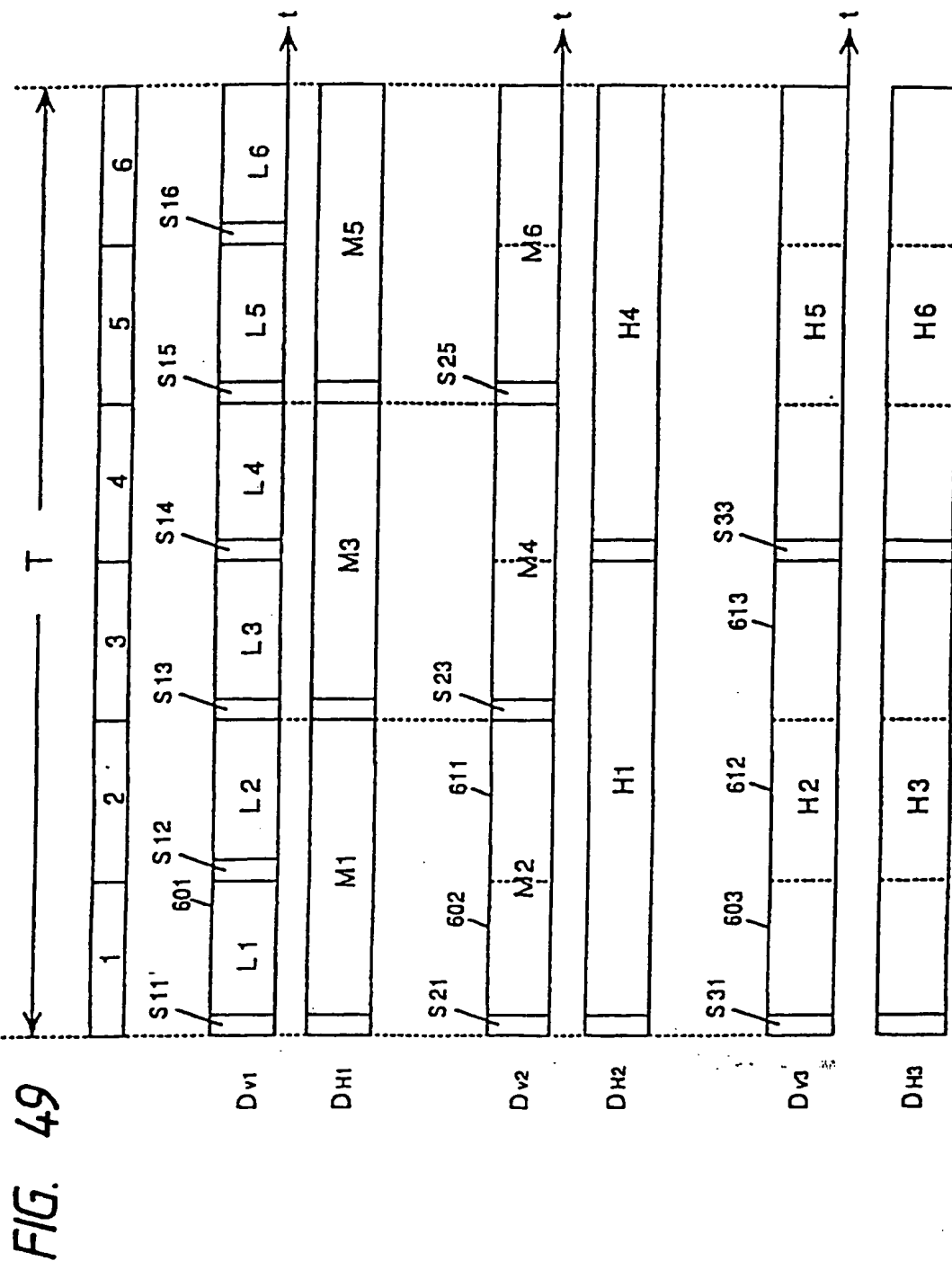
000001-39004260

FIG. 48





U.S. Pat. 5,802,241



000227-89004260

FIG. 50

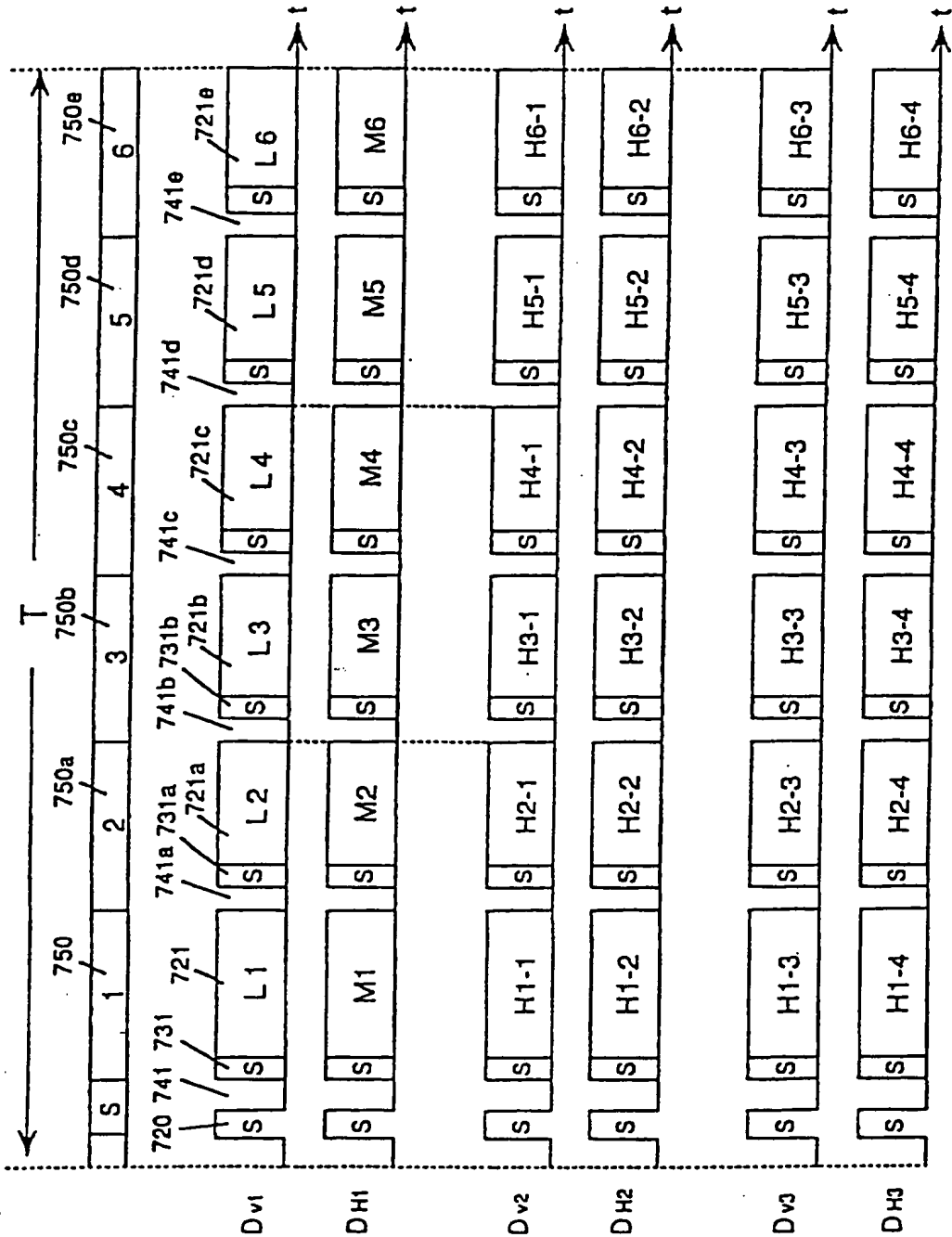


FIG. 51

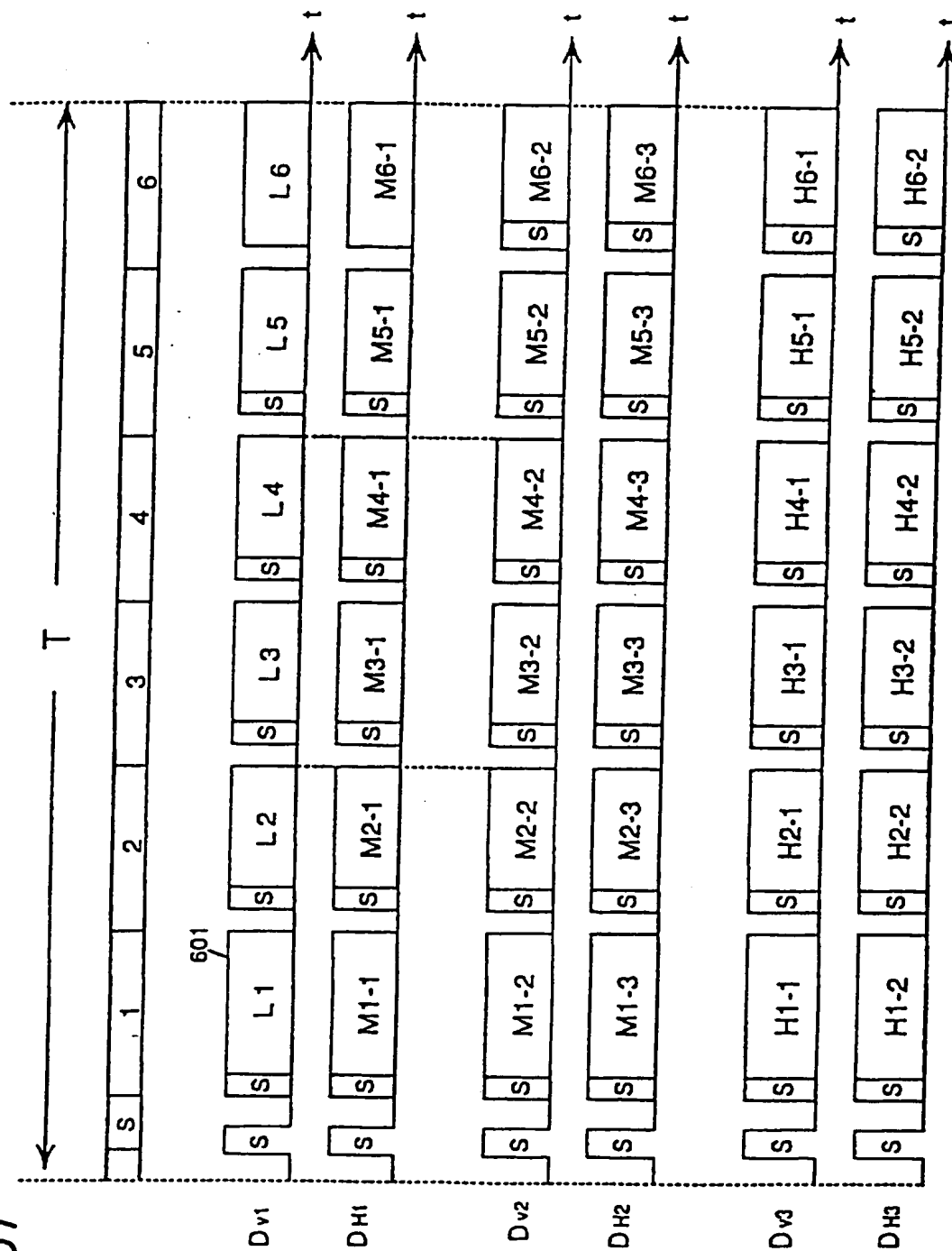


FIG. 52

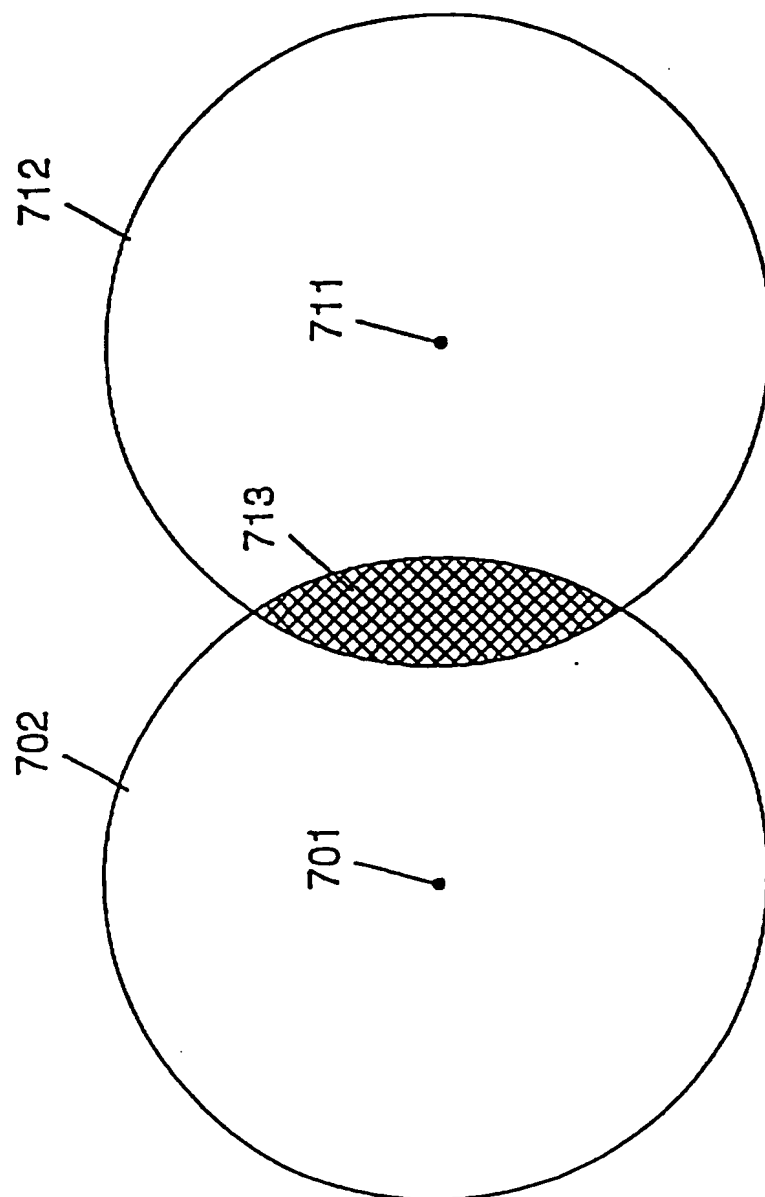
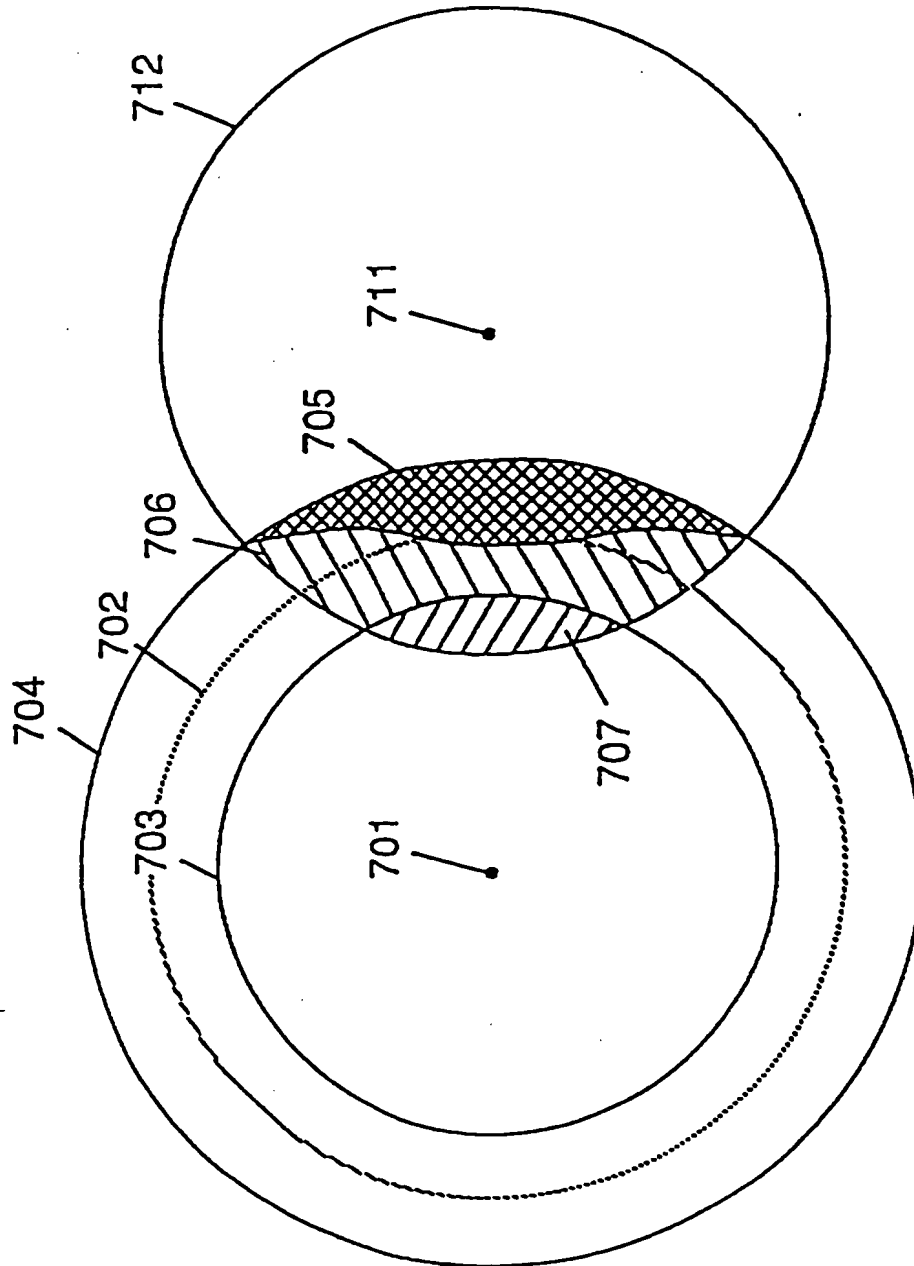
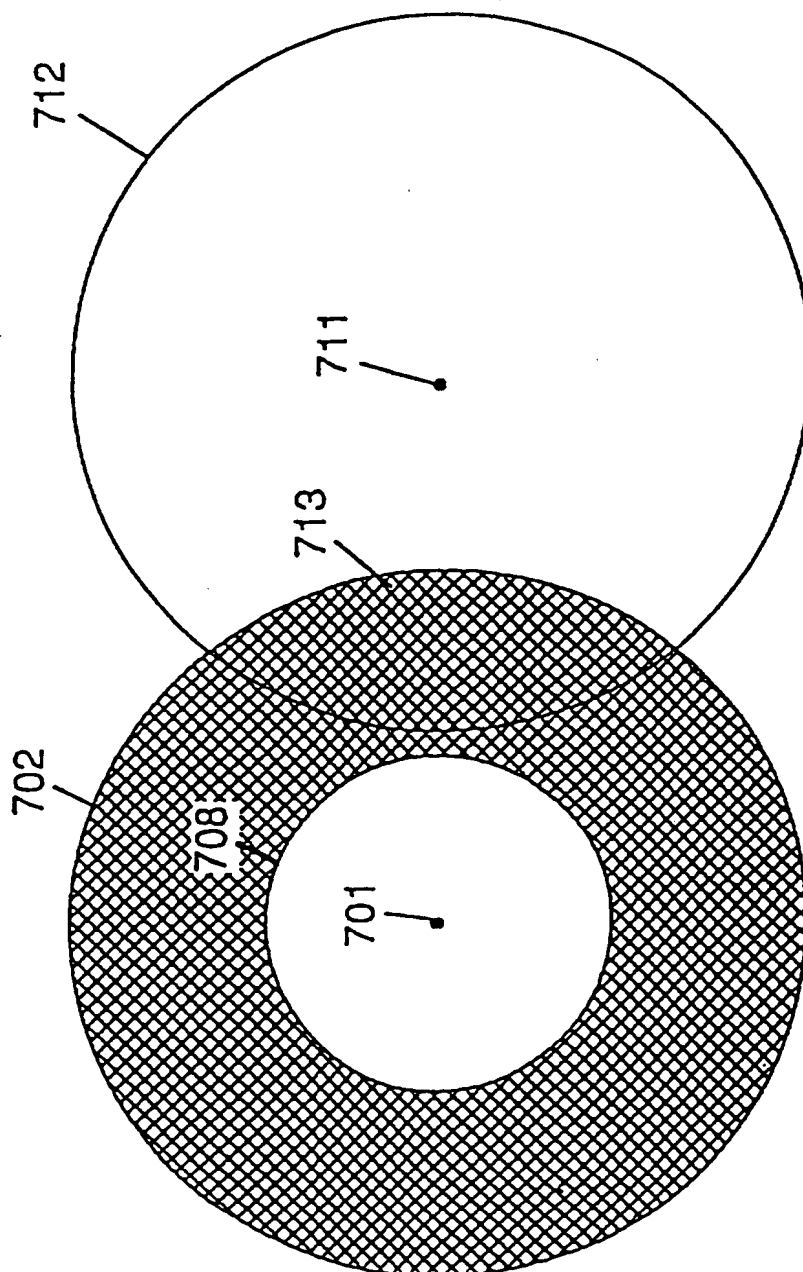


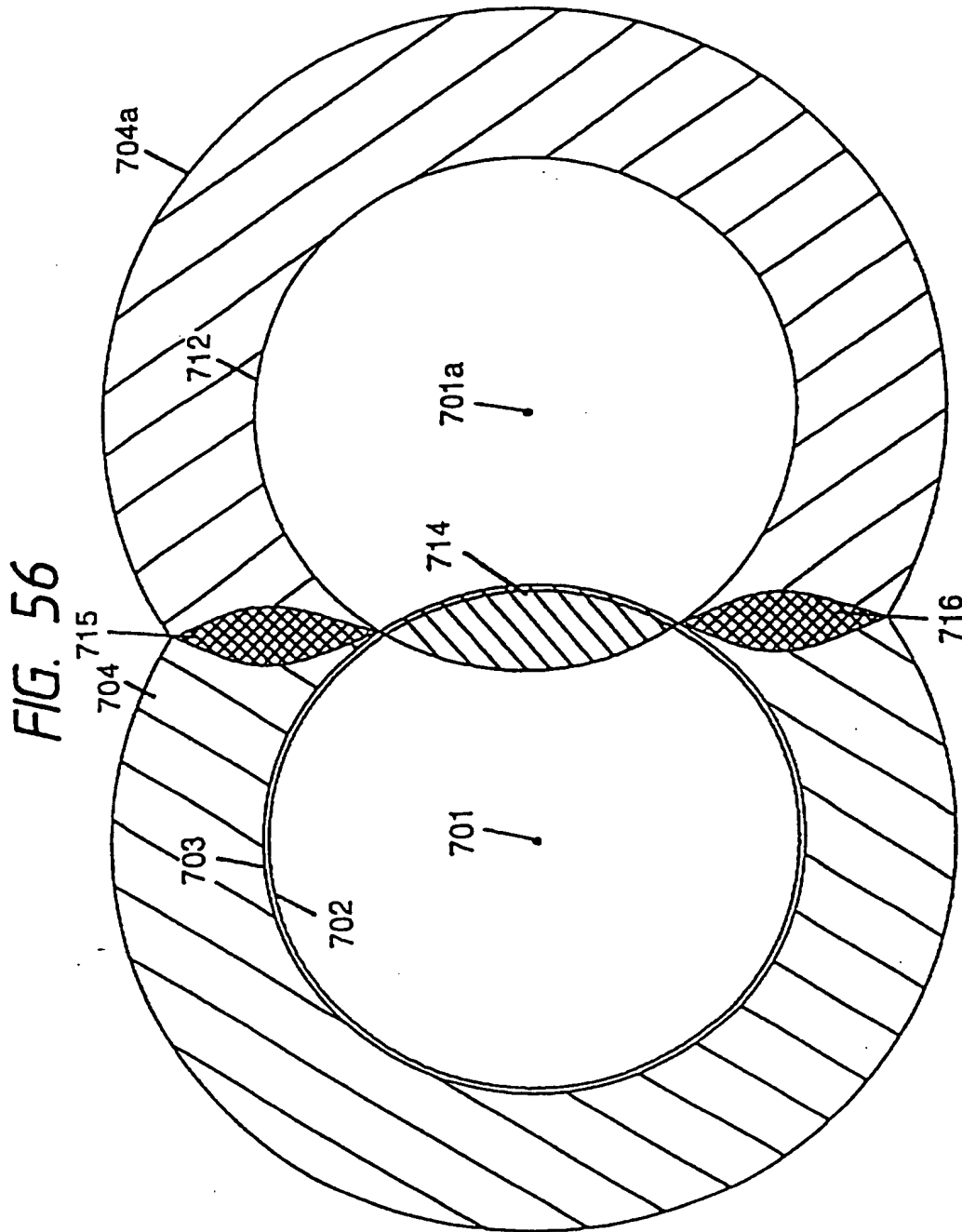
FIG. 53



000221-39007450



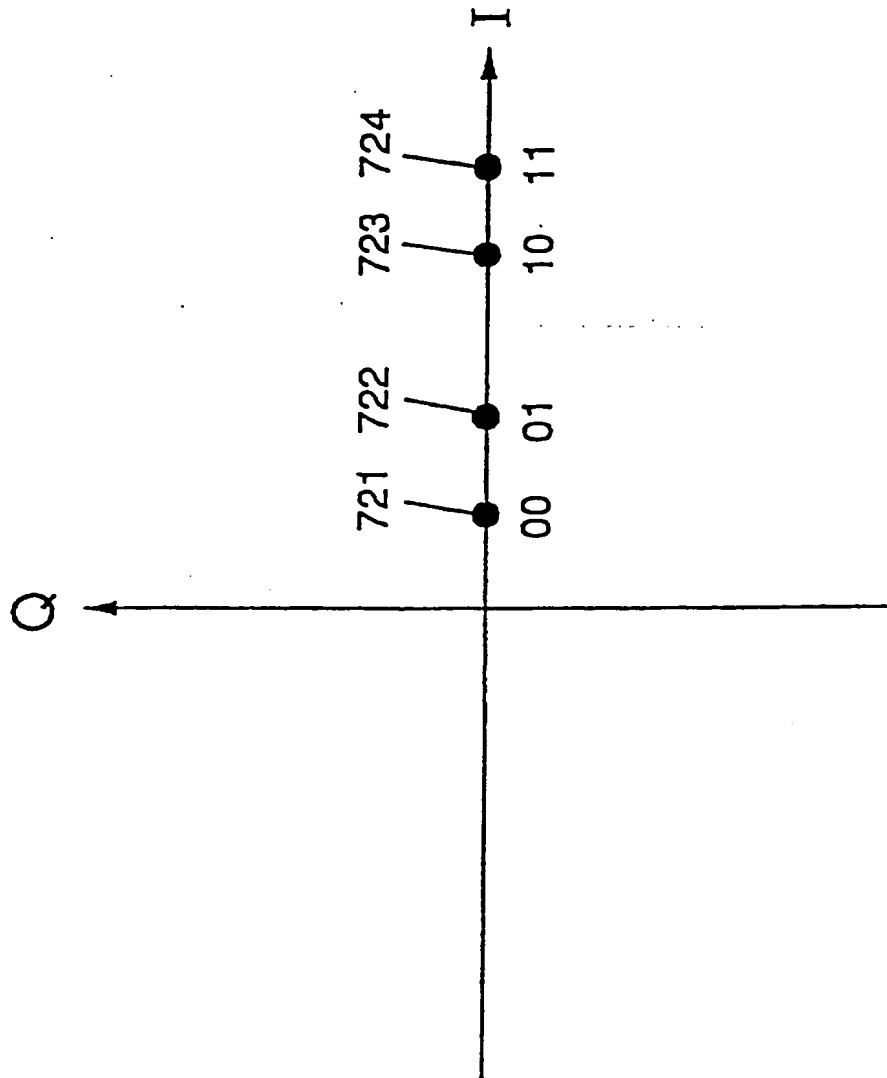


[illegible]



| 1946 | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1946 | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 |

FIG. 57



000227-89004260

FIG. 58

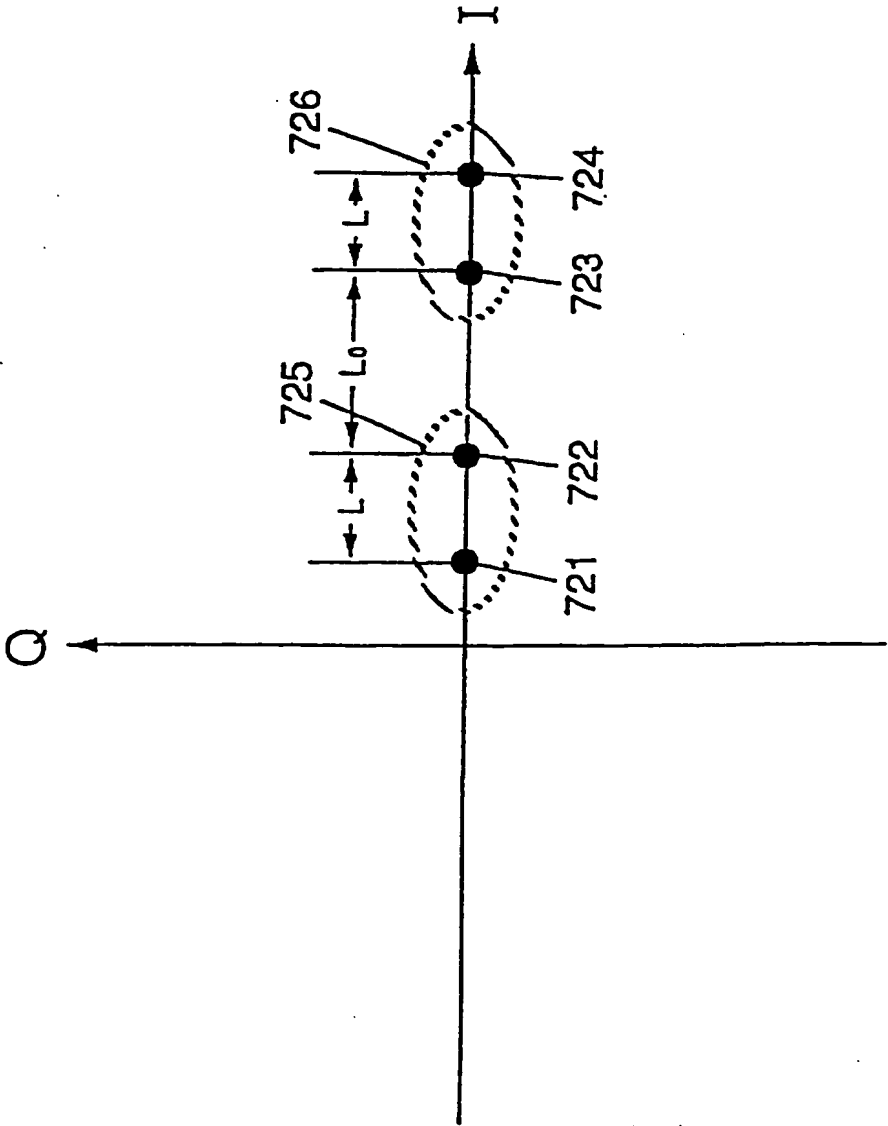


FIG. 59(a)

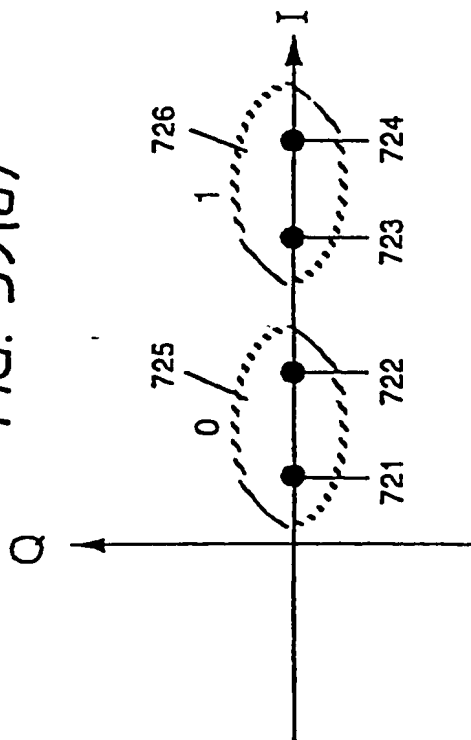


FIG. 59(c)

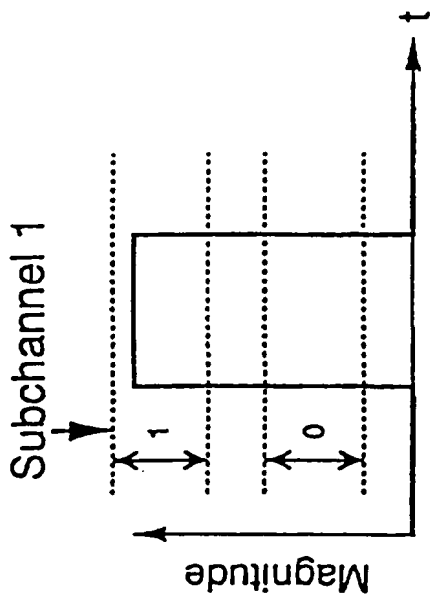


FIG. 59(b)

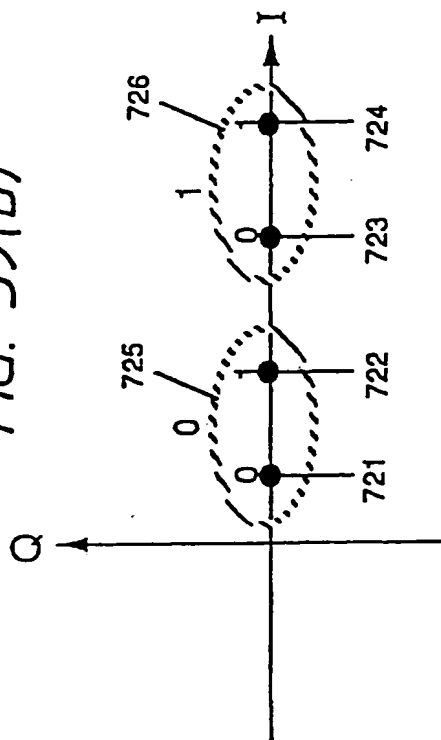
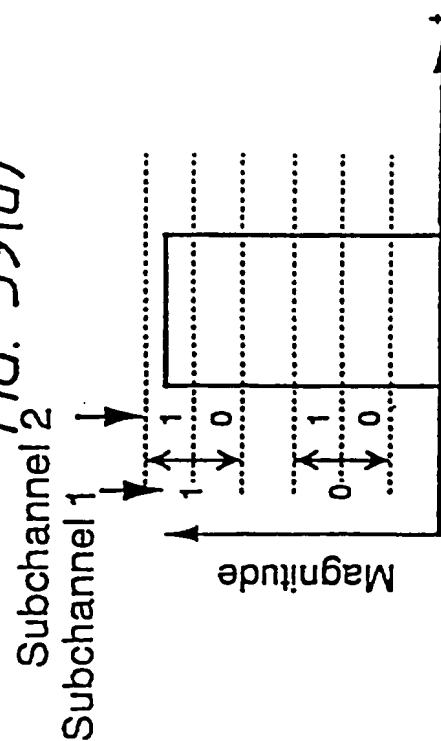


FIG. 59(d)



000227-80041460

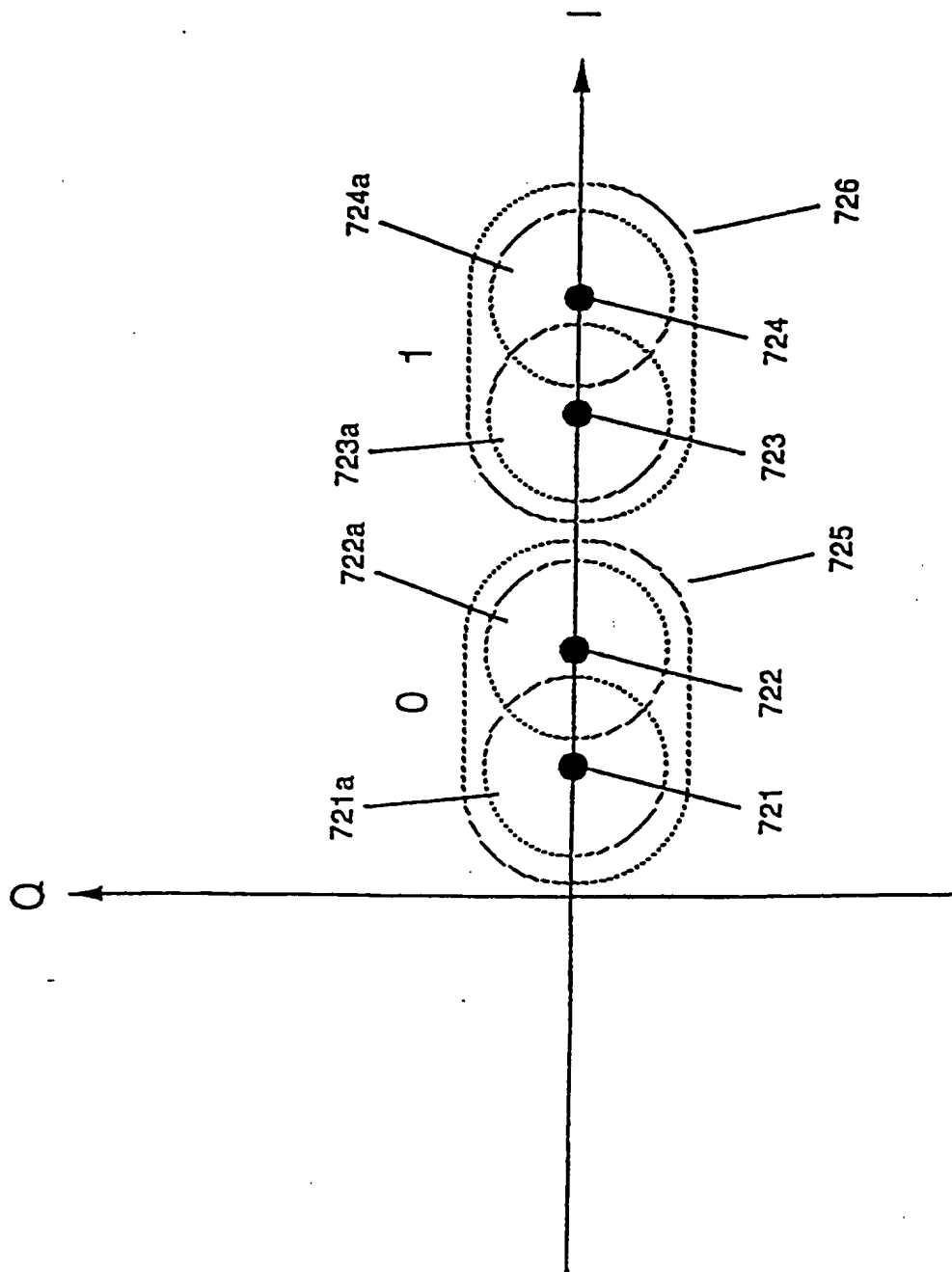


FIG. 61

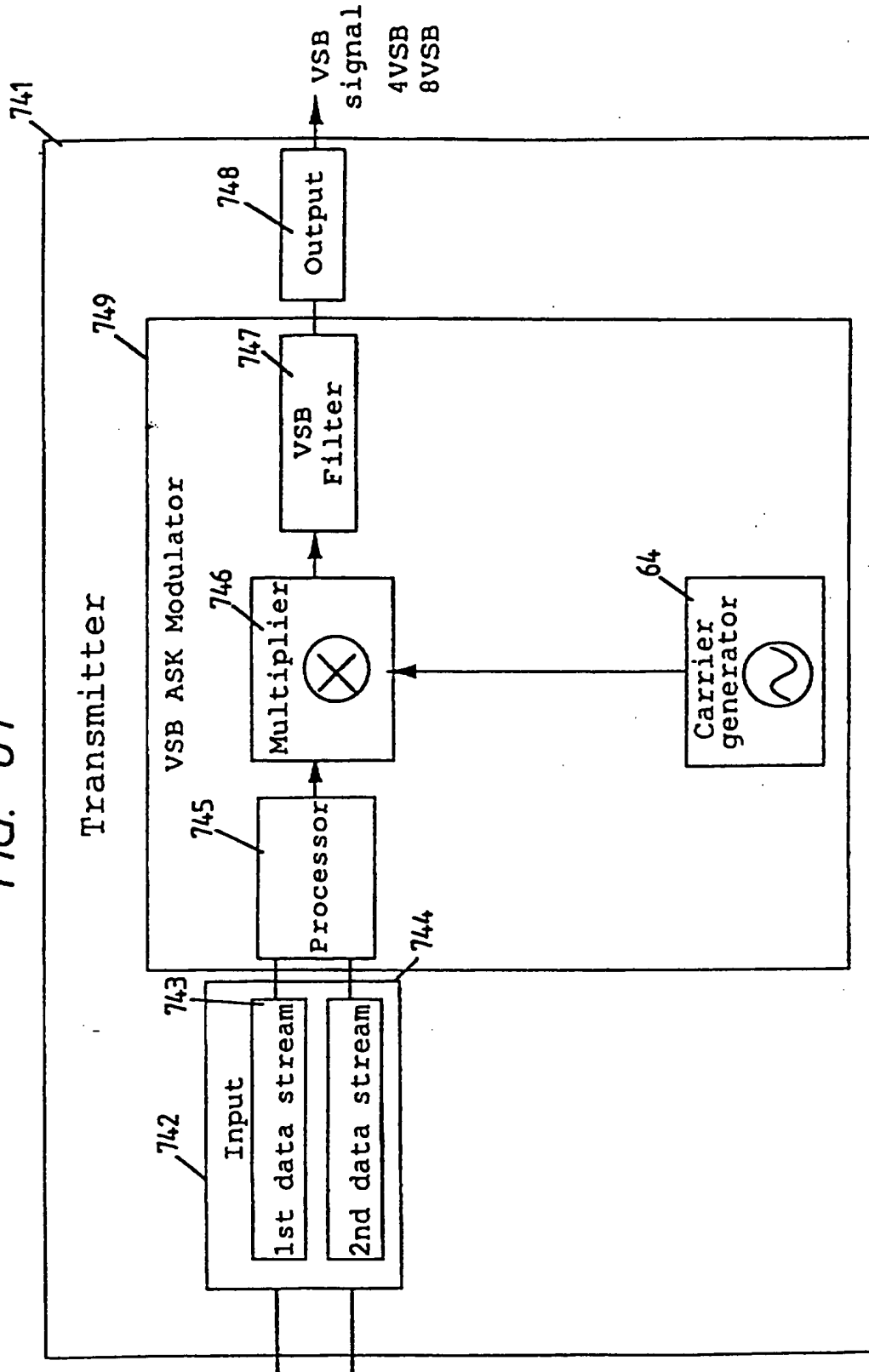


FIG. 62(a)

Spectrum of ASK Signal

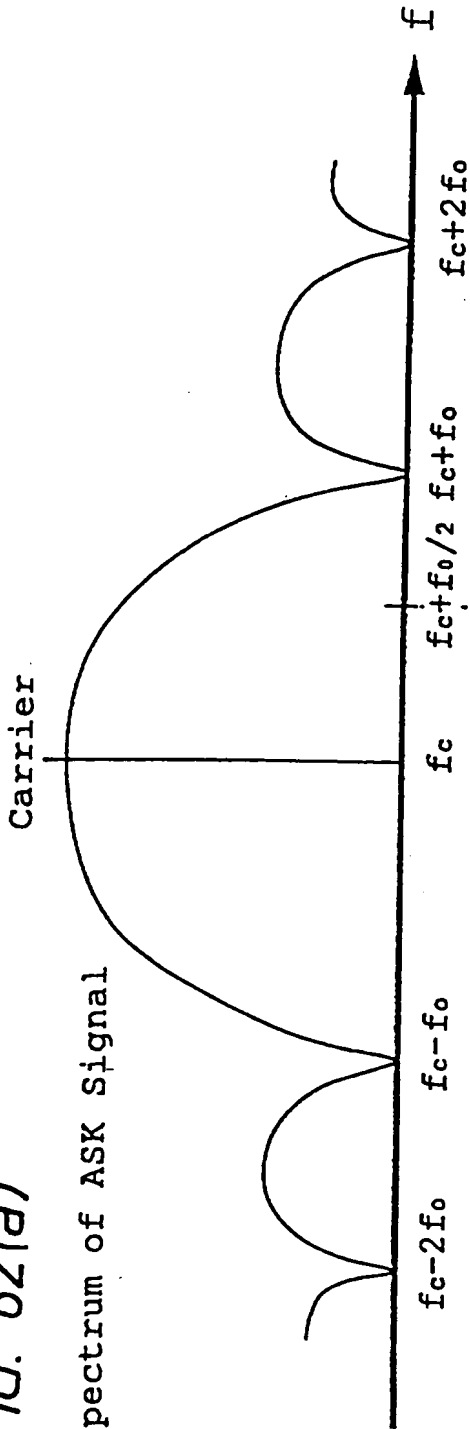


FIG. 62(b)

Characteristics of VSB Filter

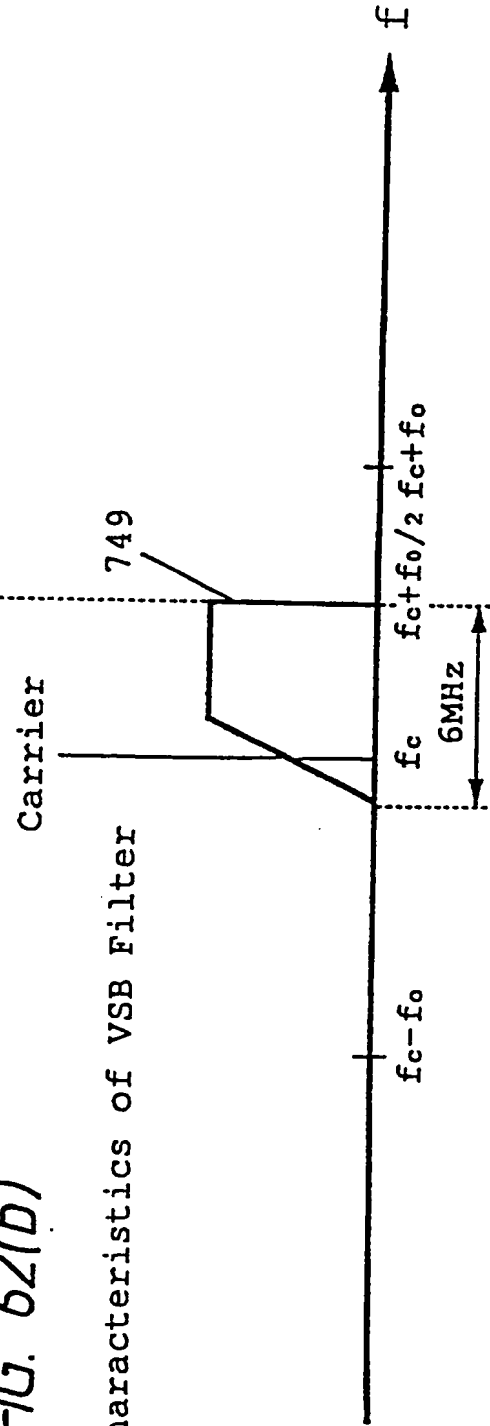
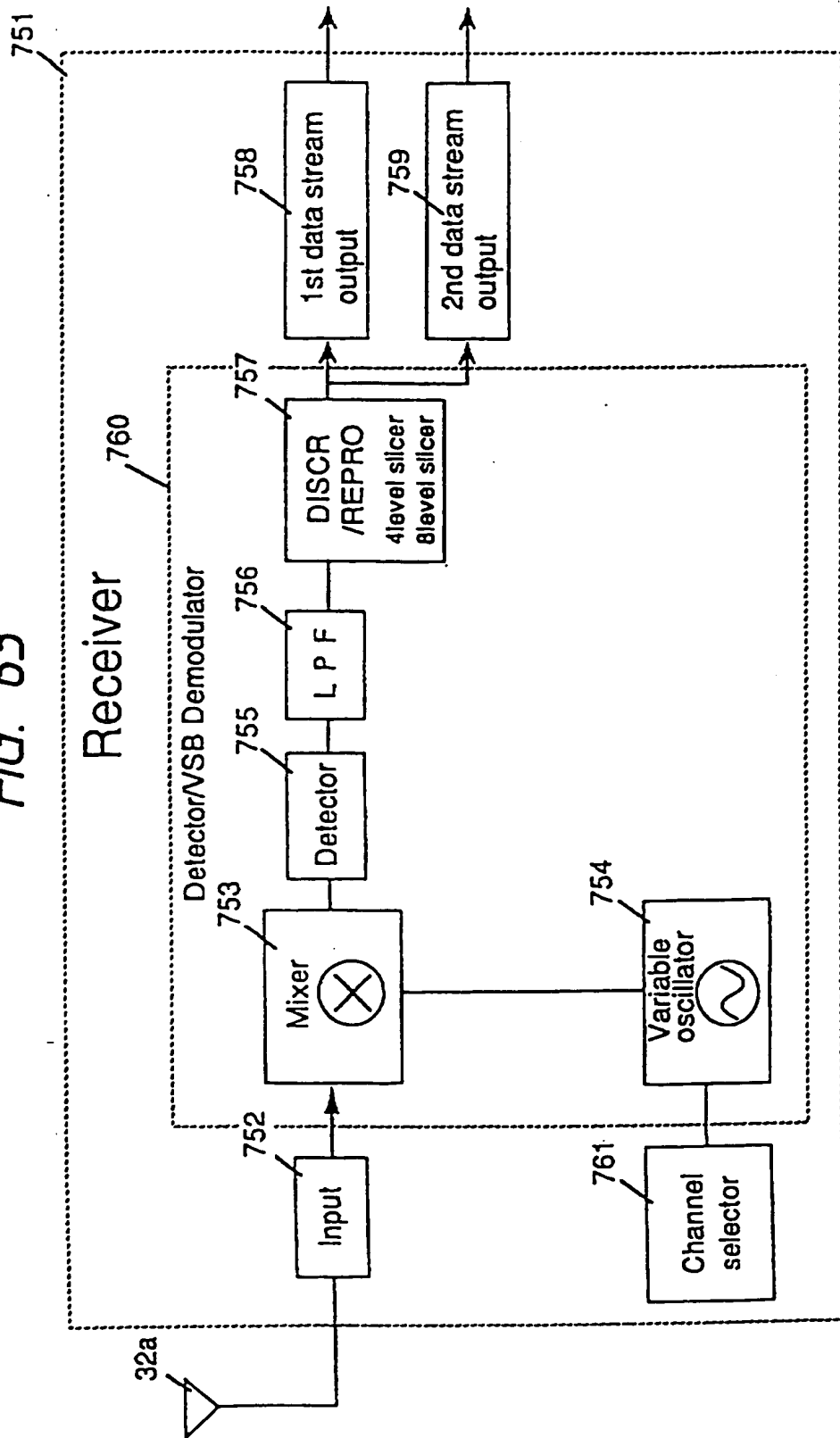


FIG. 63



000001-89004260

FIG. 64

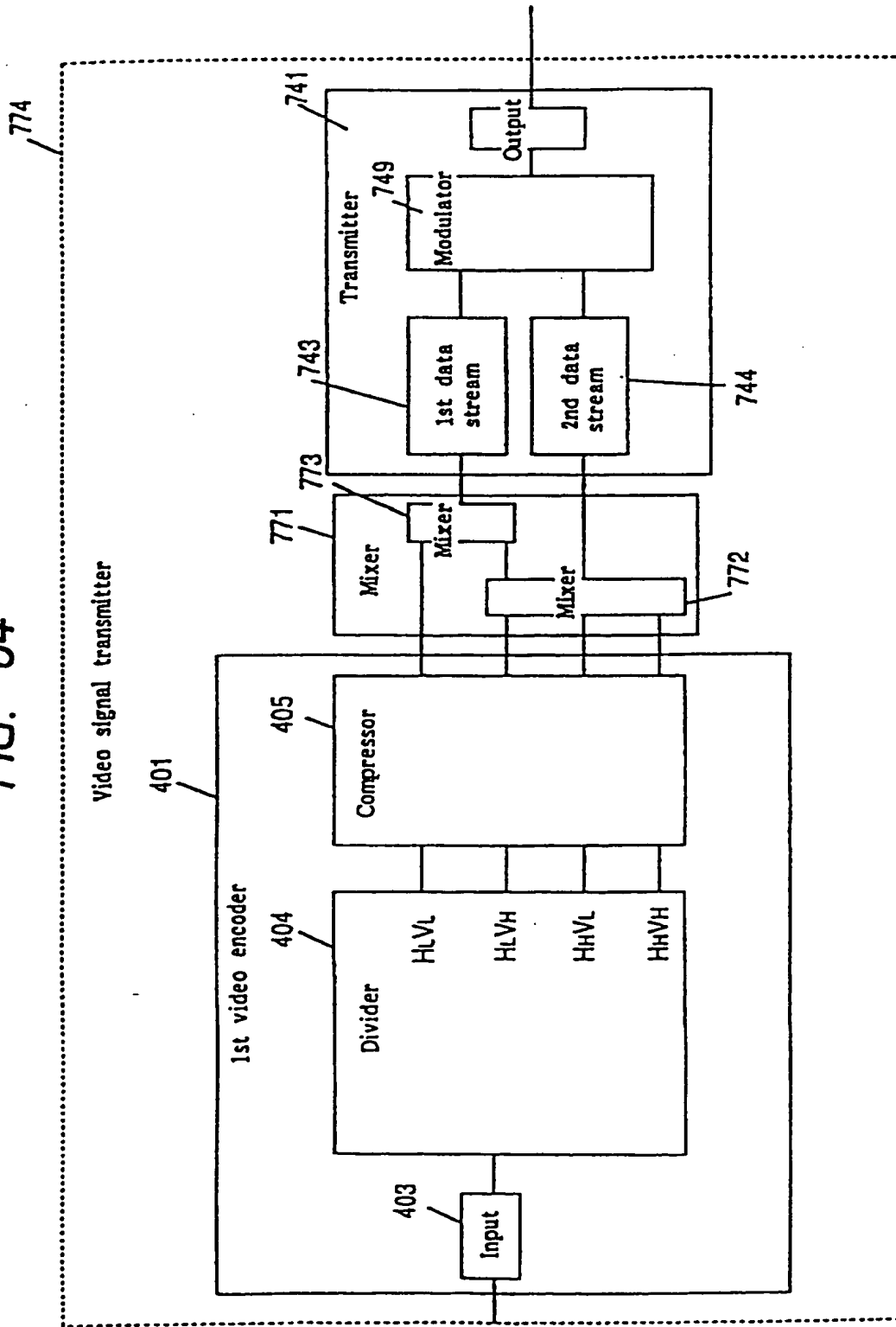
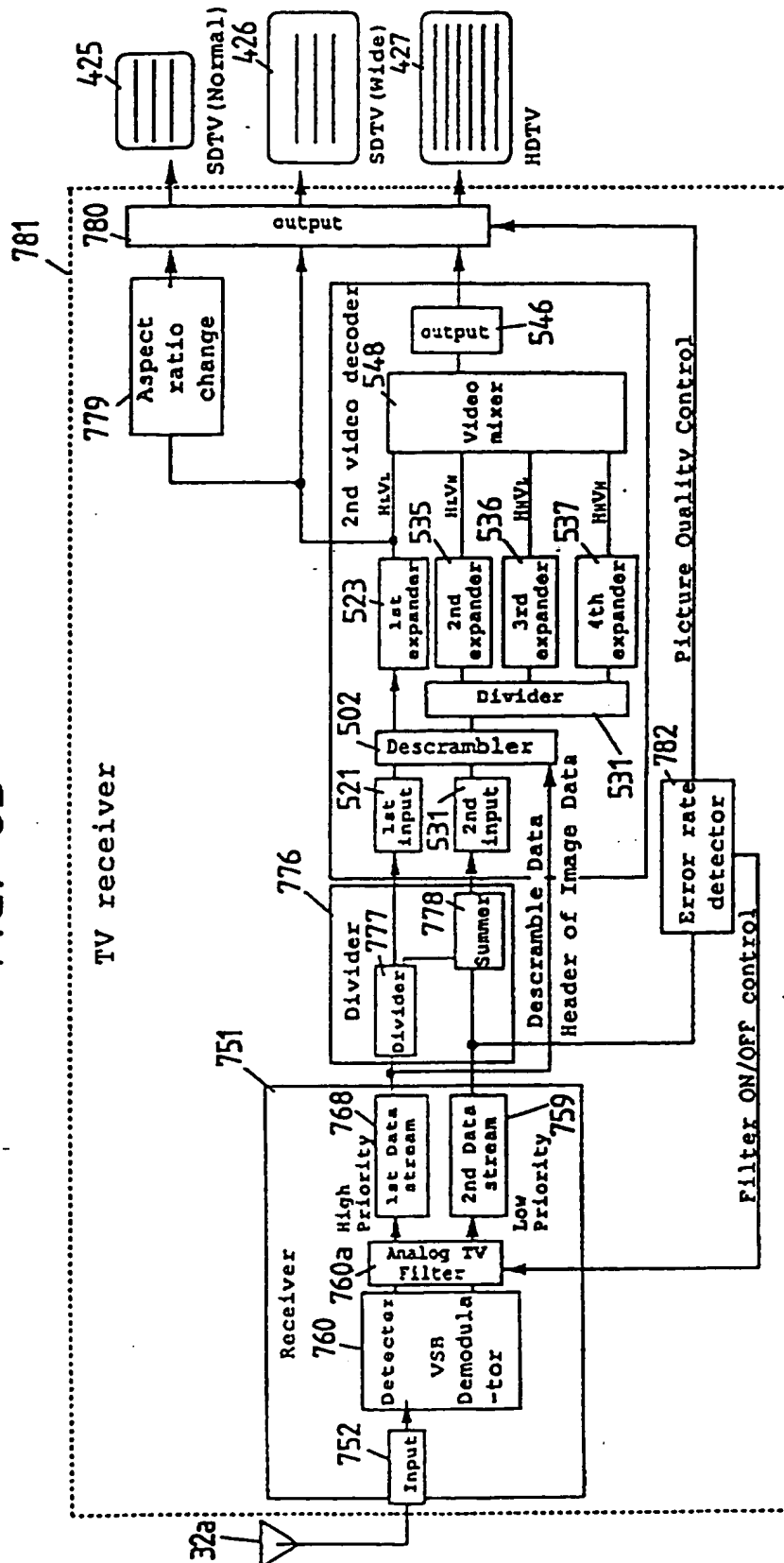




FIG. 65



0000227 89004260

FIG. 66

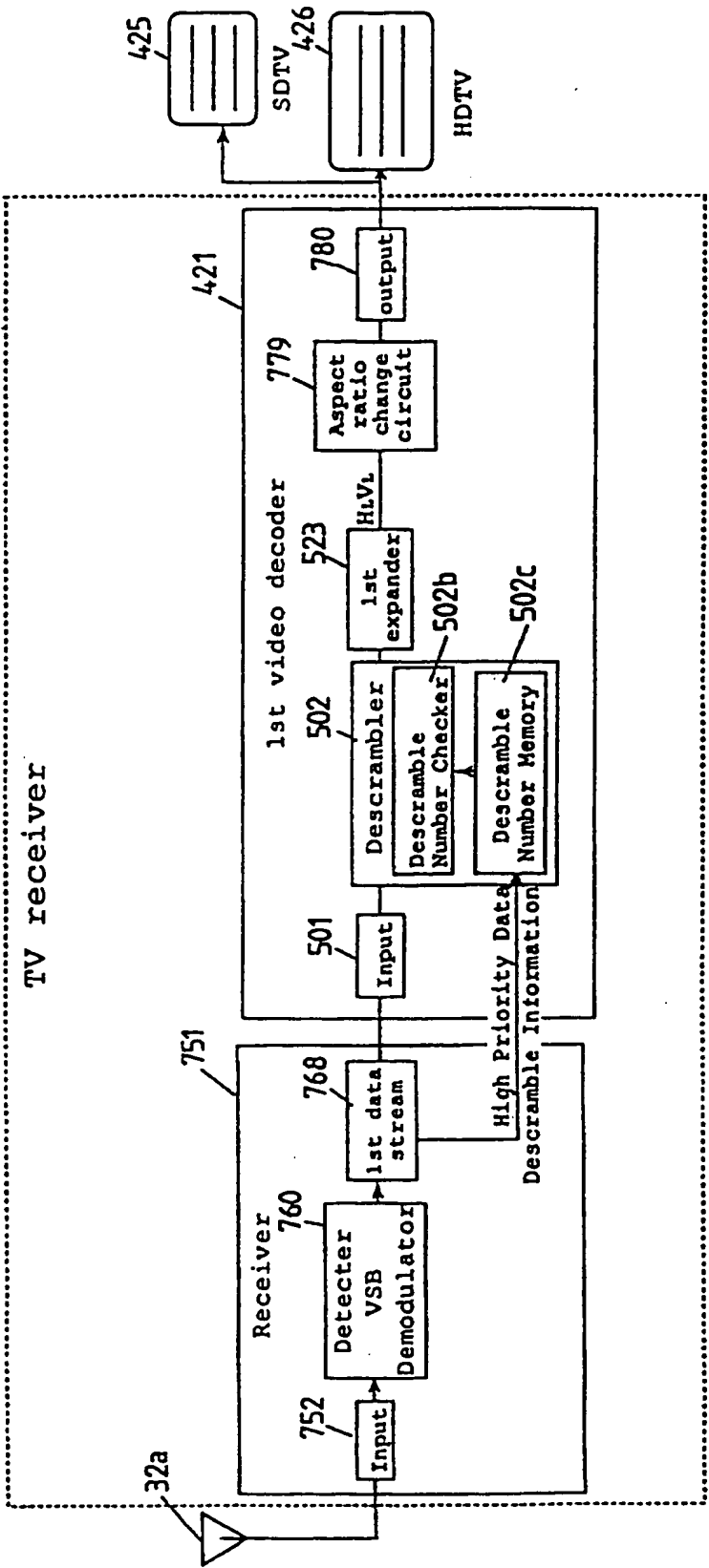


FIG. 67

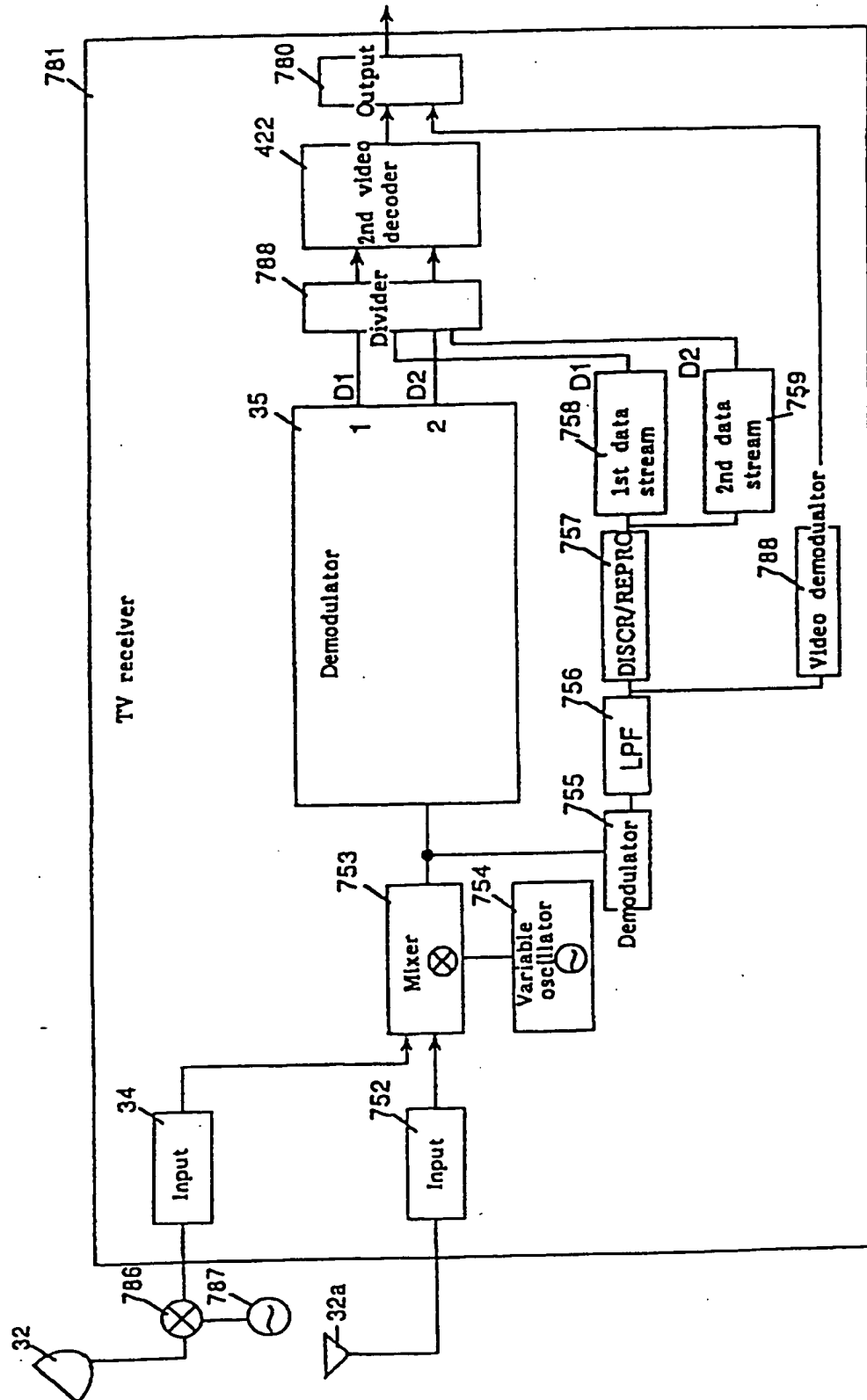


FIG. 68(a)

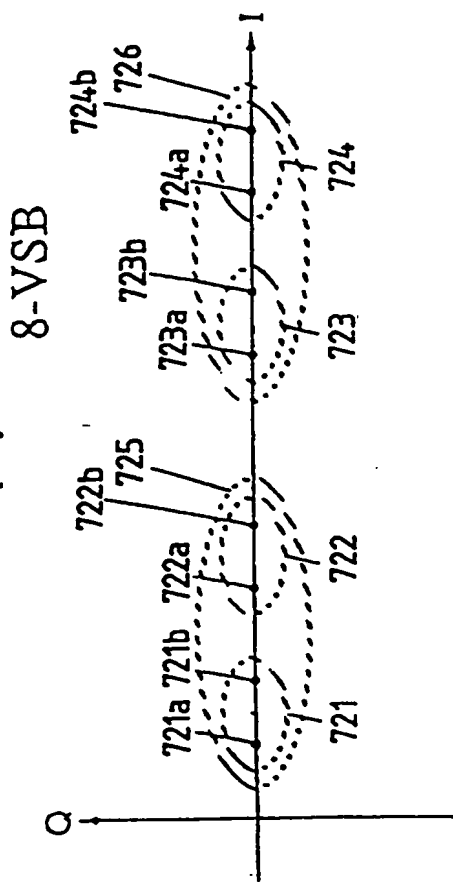


FIG. 68(b)

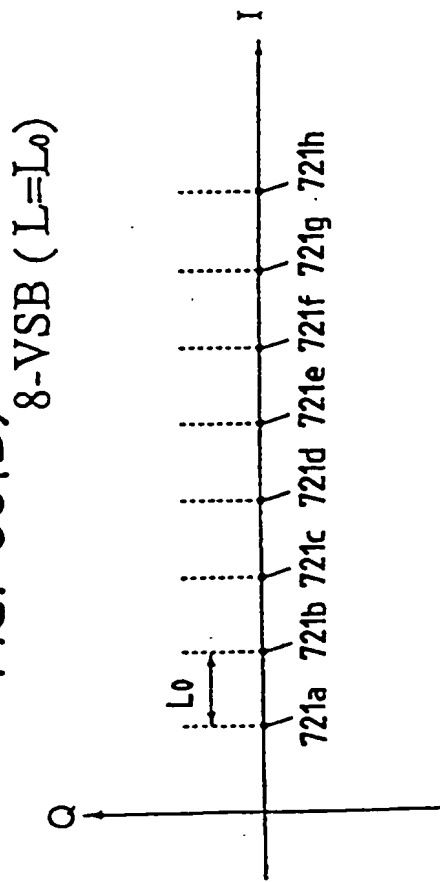
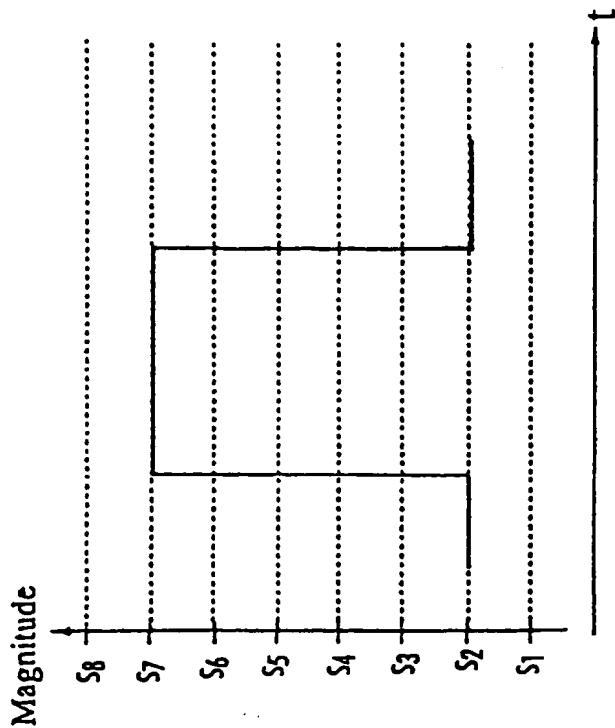


FIG. 68(c)



000021-85004260

FIG. 69

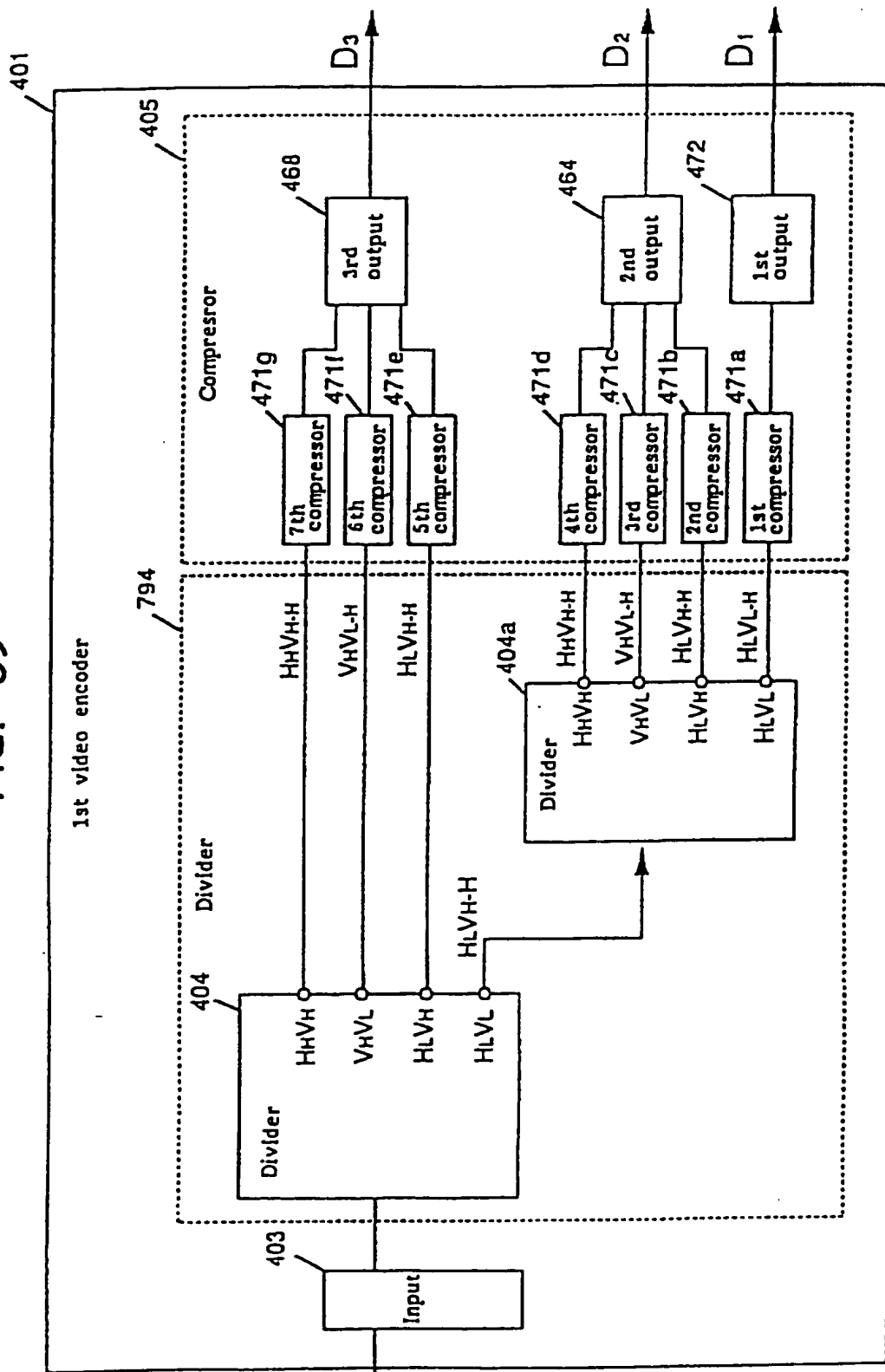
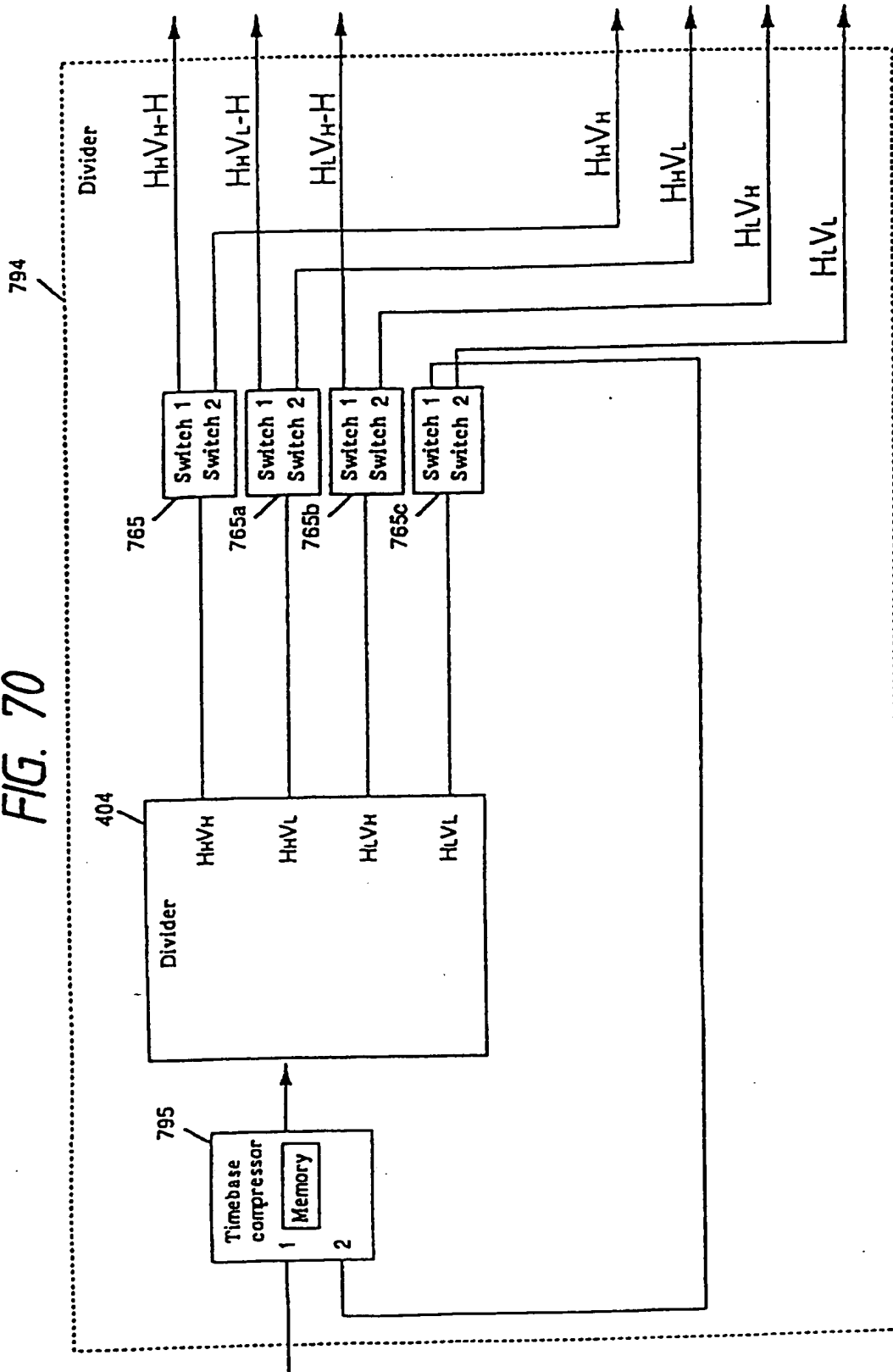


Image = 89041260

FIG. 70



0027 1390460

FIG. 71

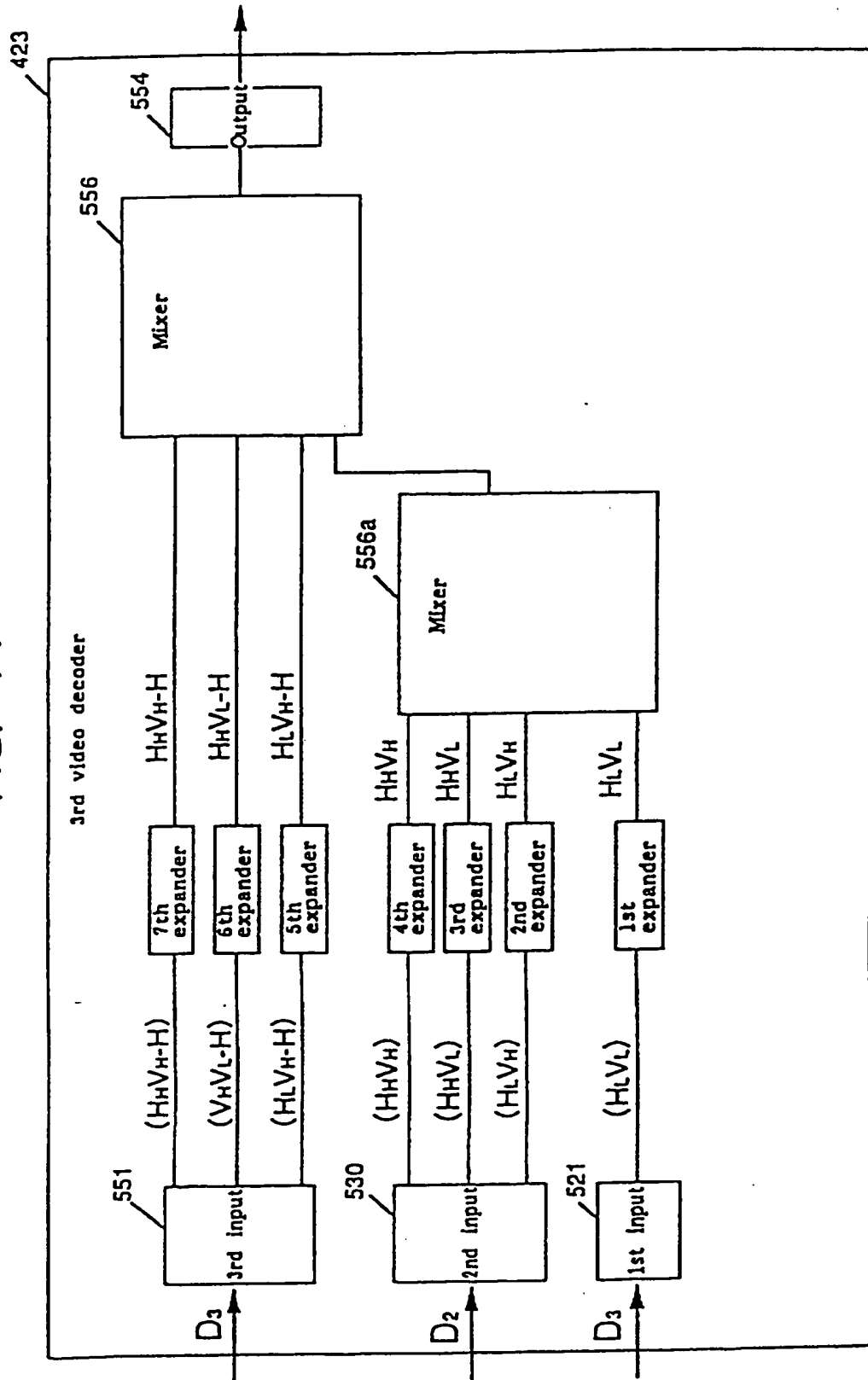


FIG. 72

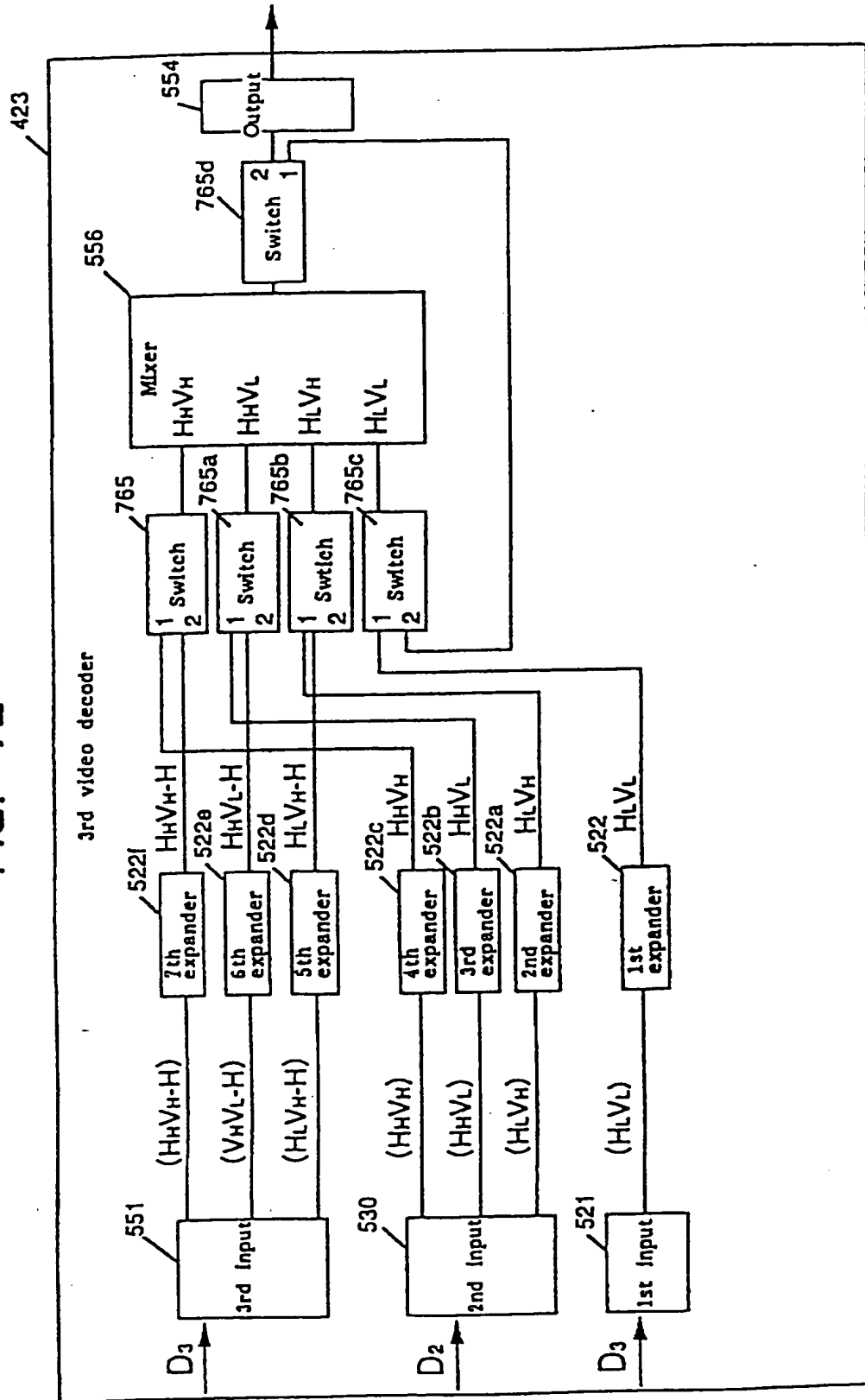
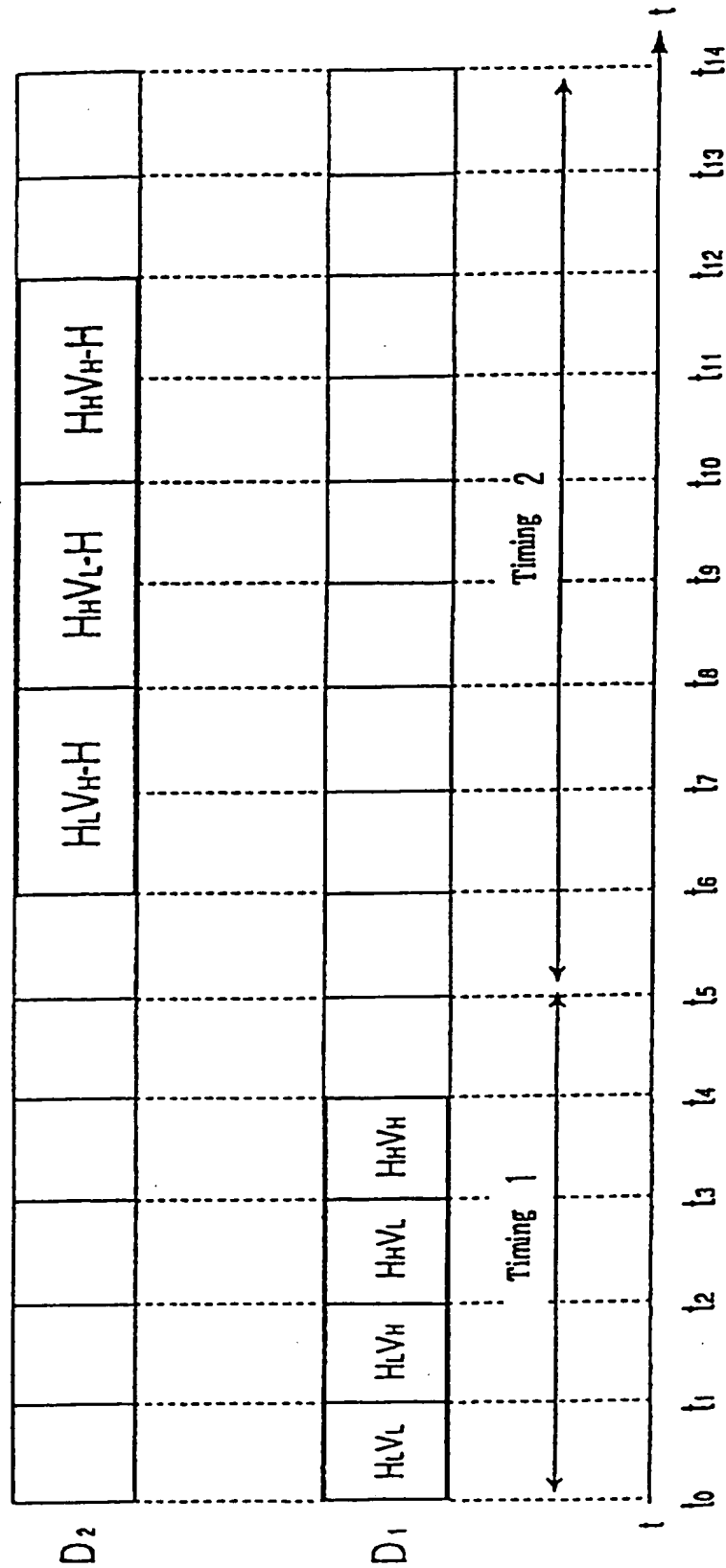




FIG. 73



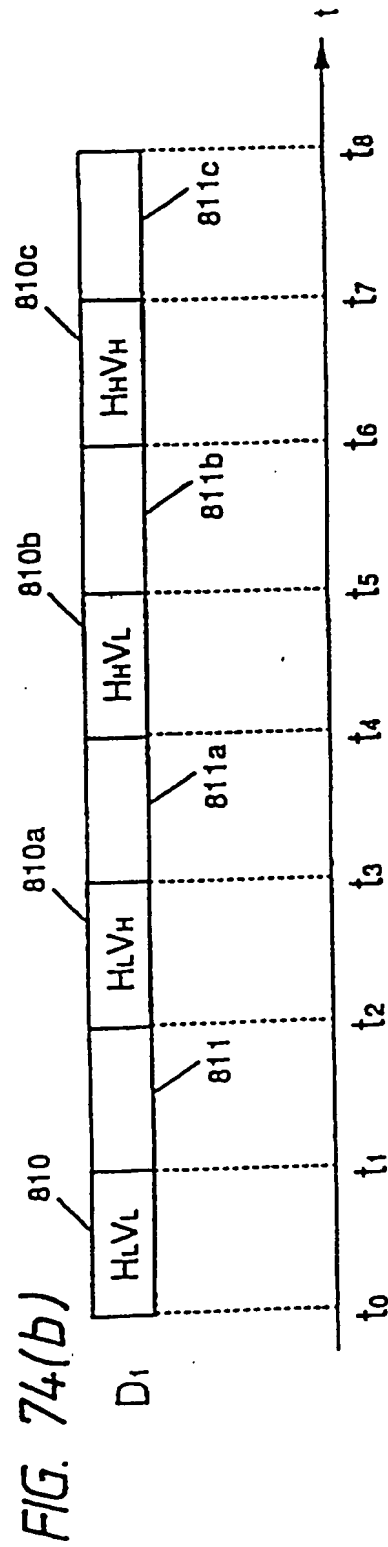
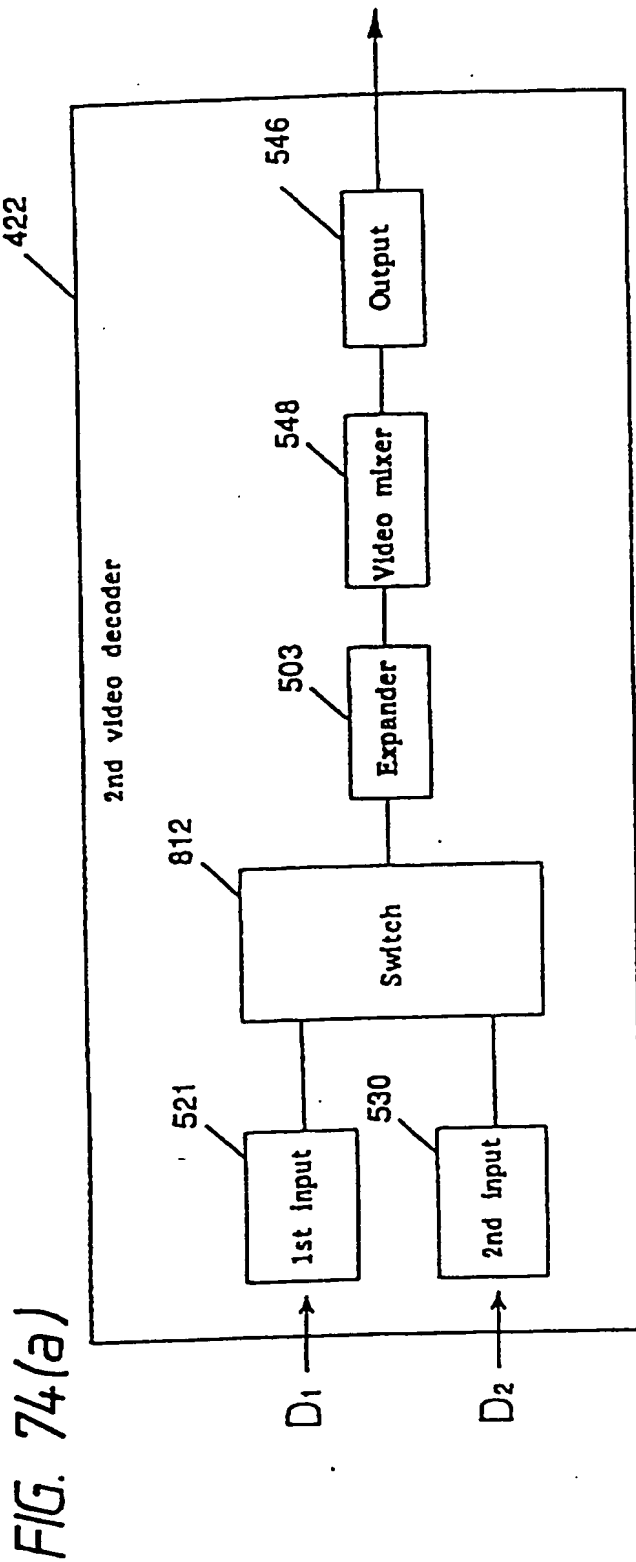


FIG. 75

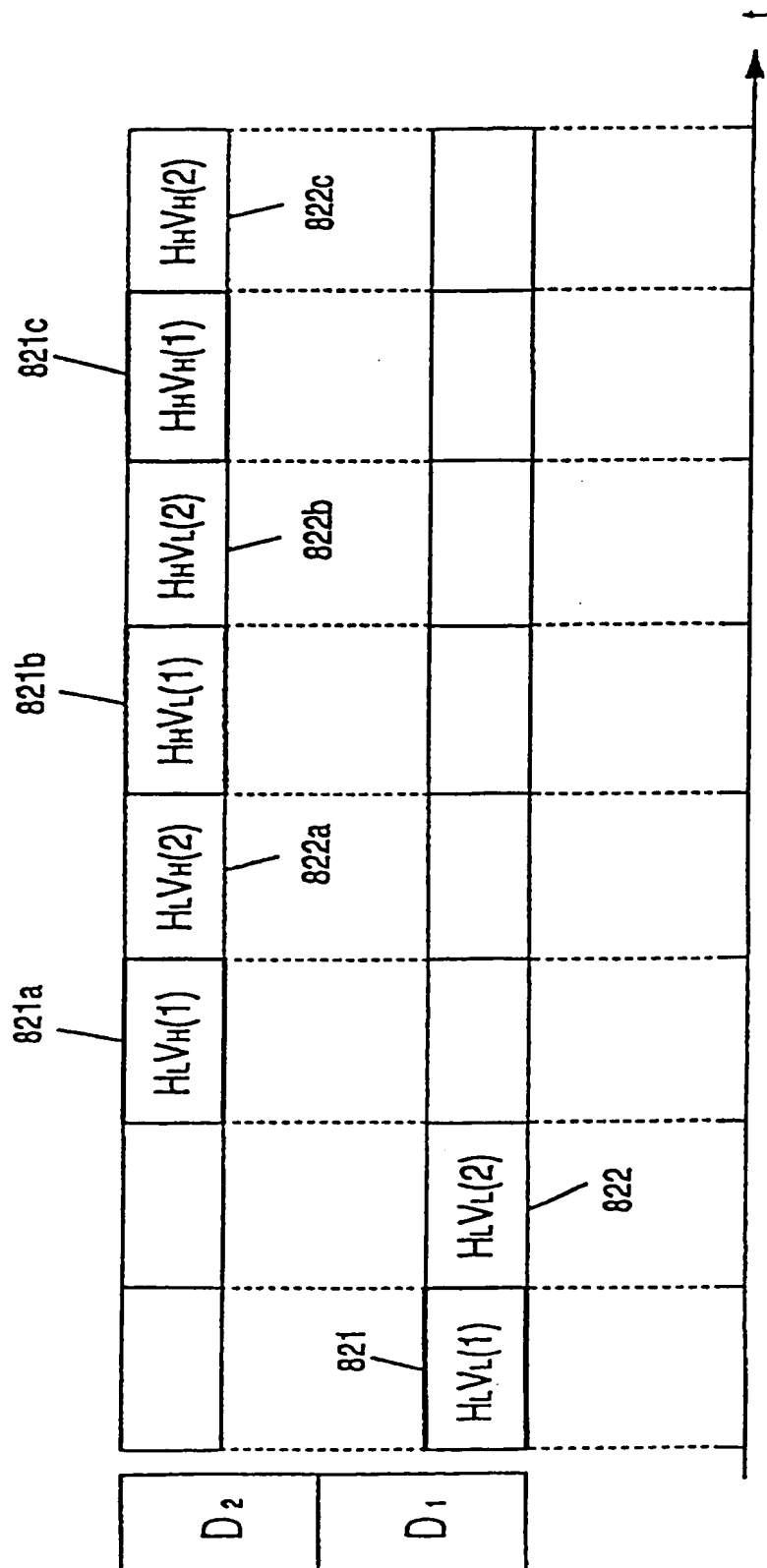


FIG. 76

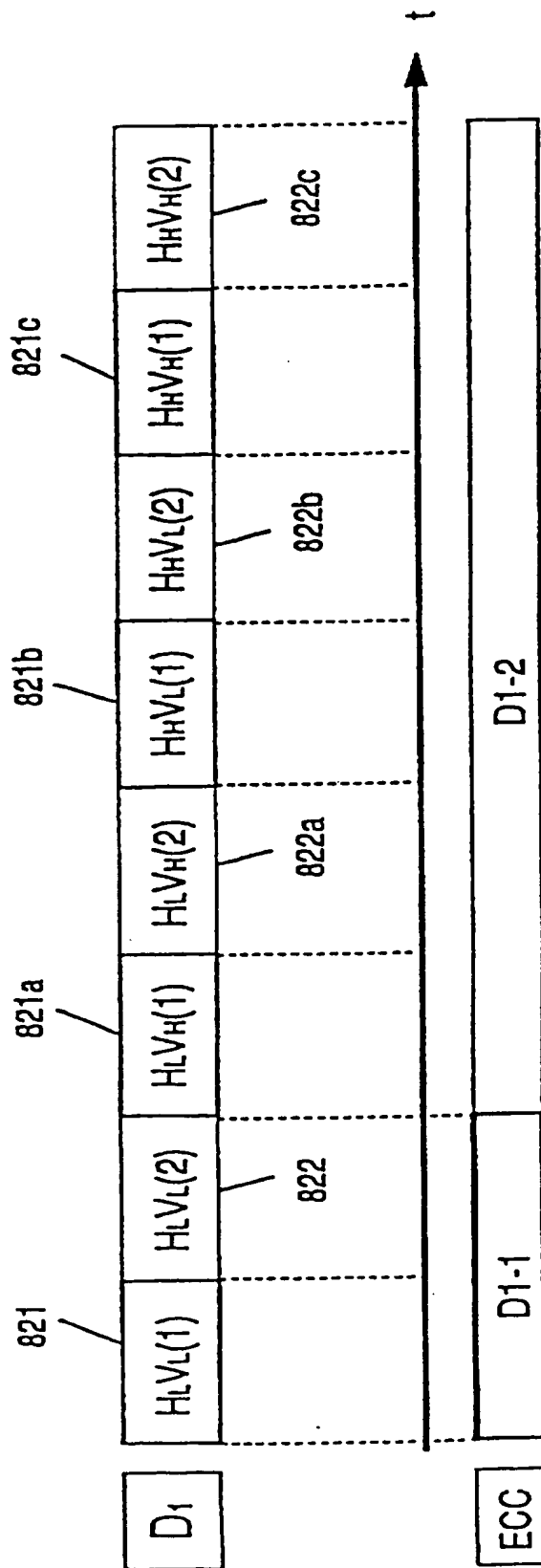


FIG. 77

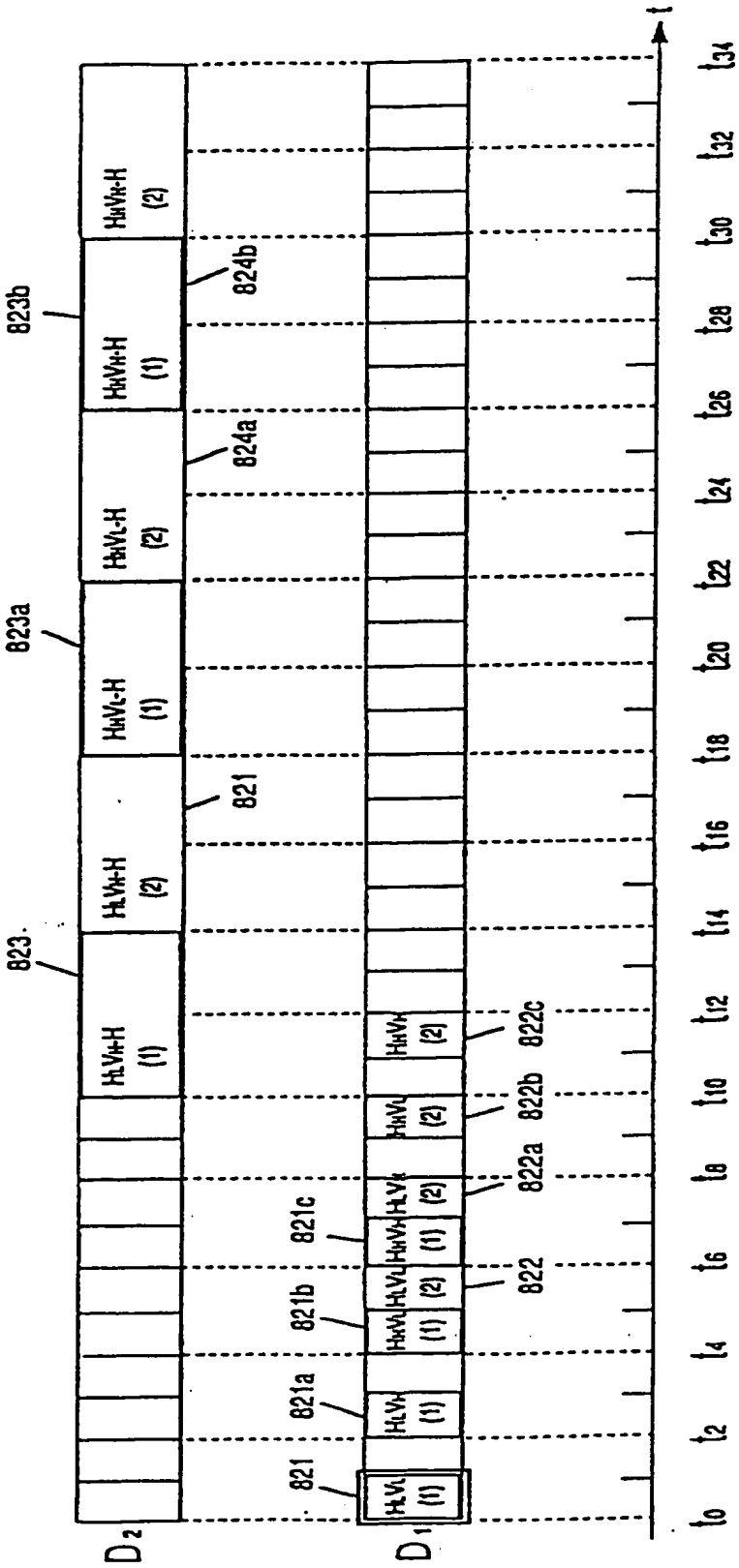
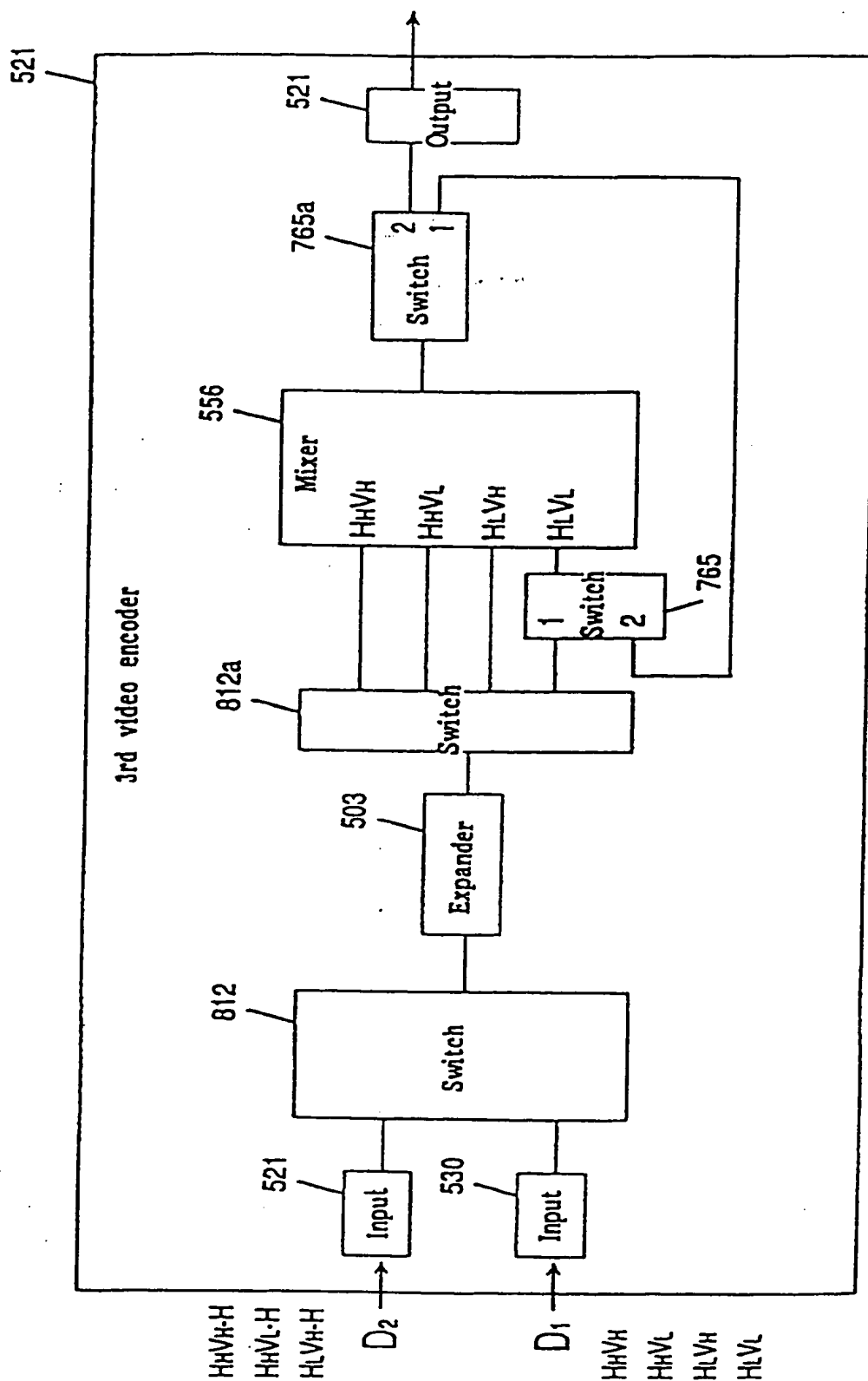


FIG. 78



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FIG. 79

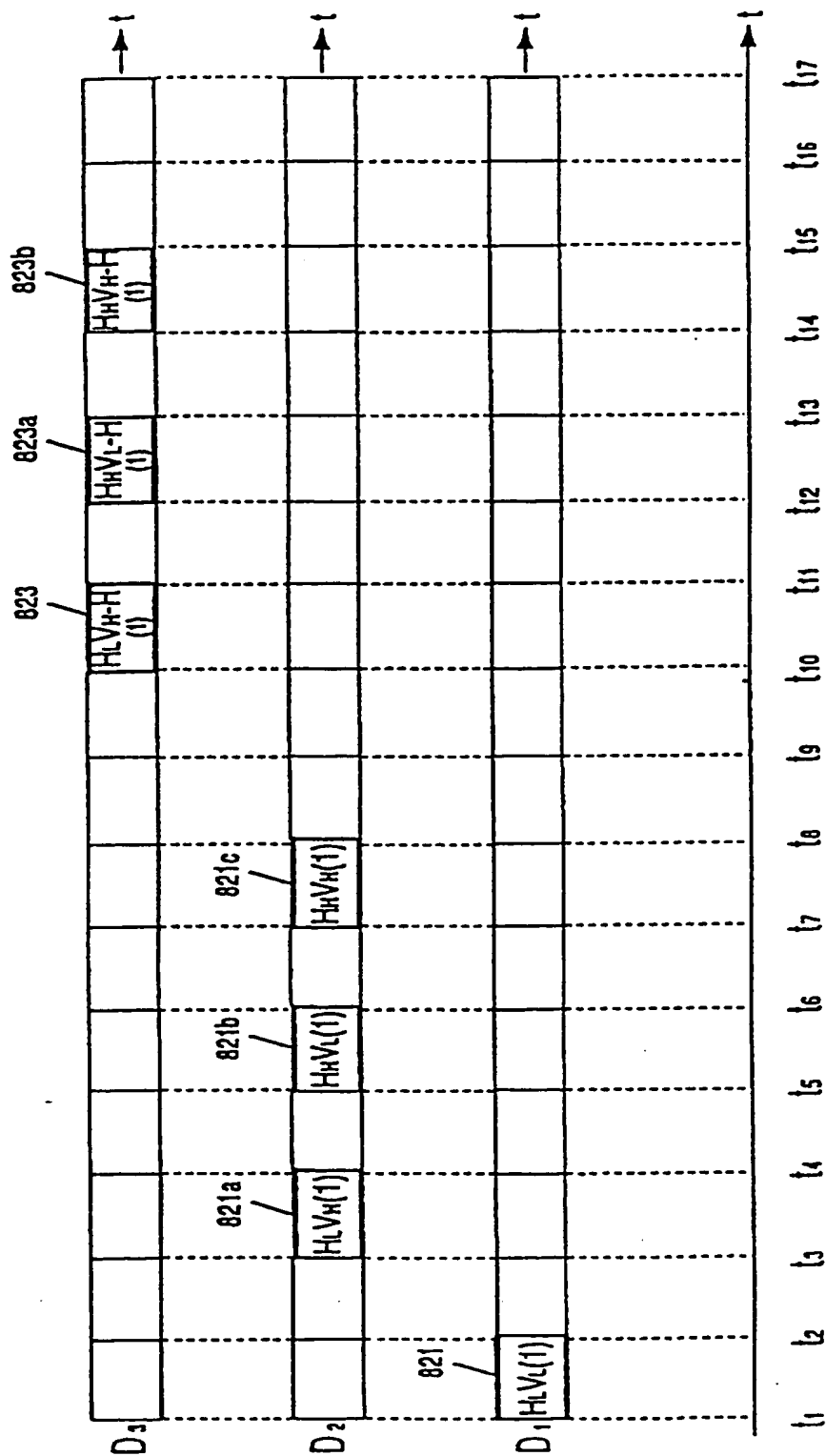
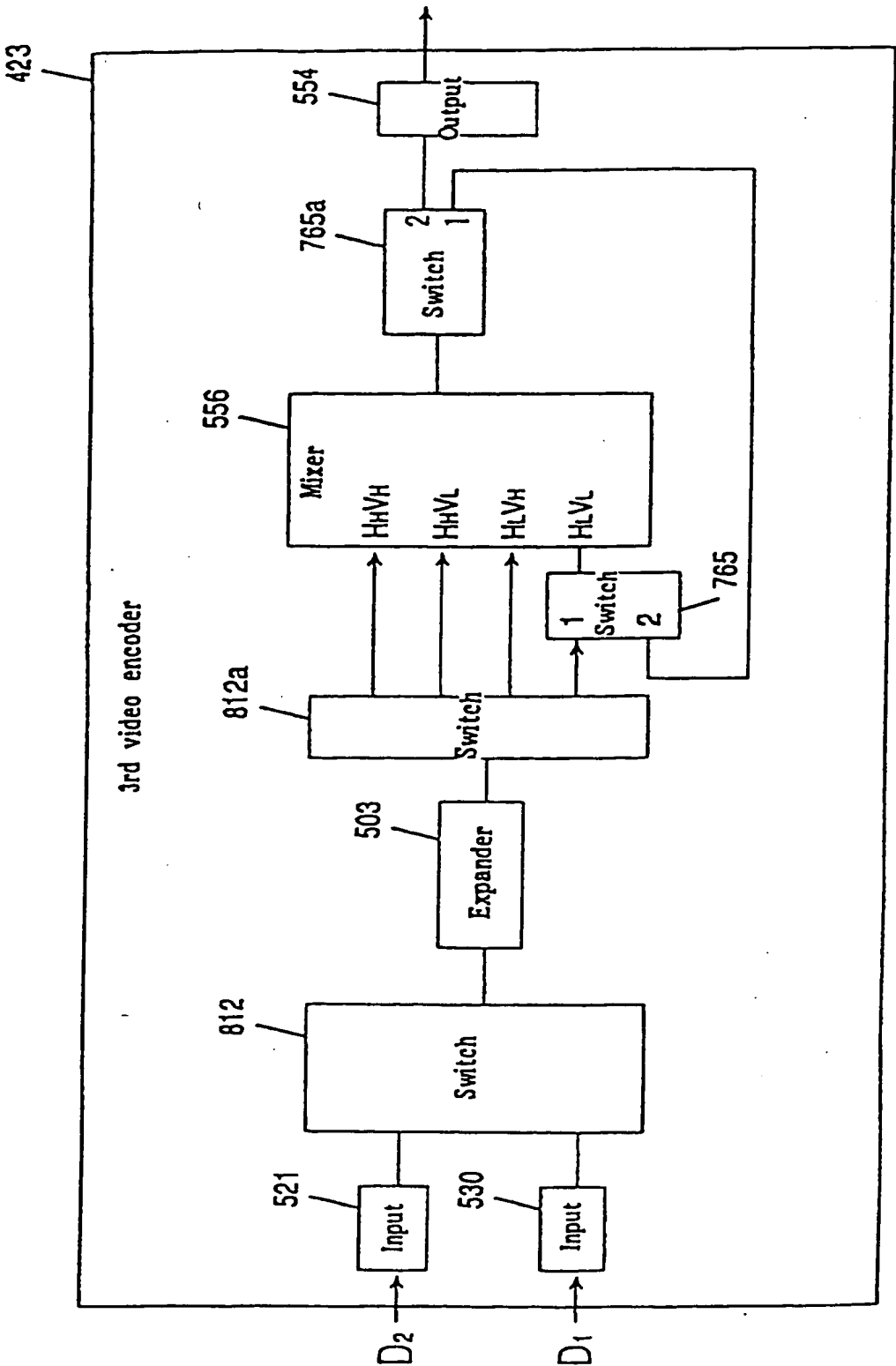


FIG. 80





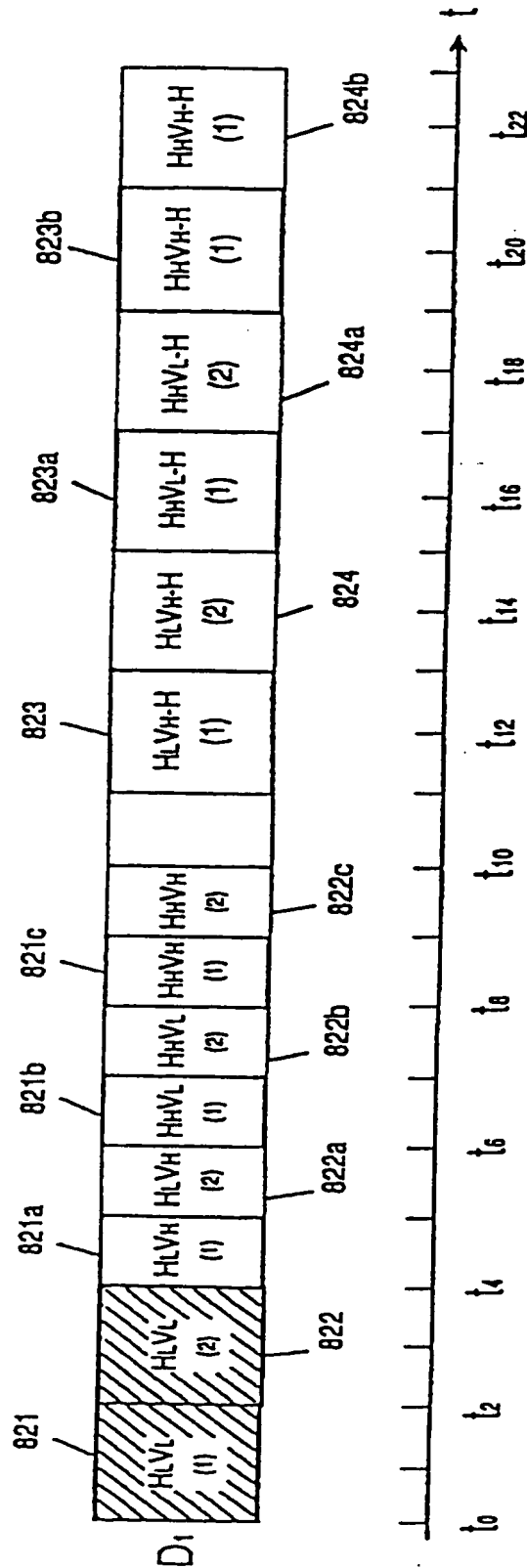


FIG. 82

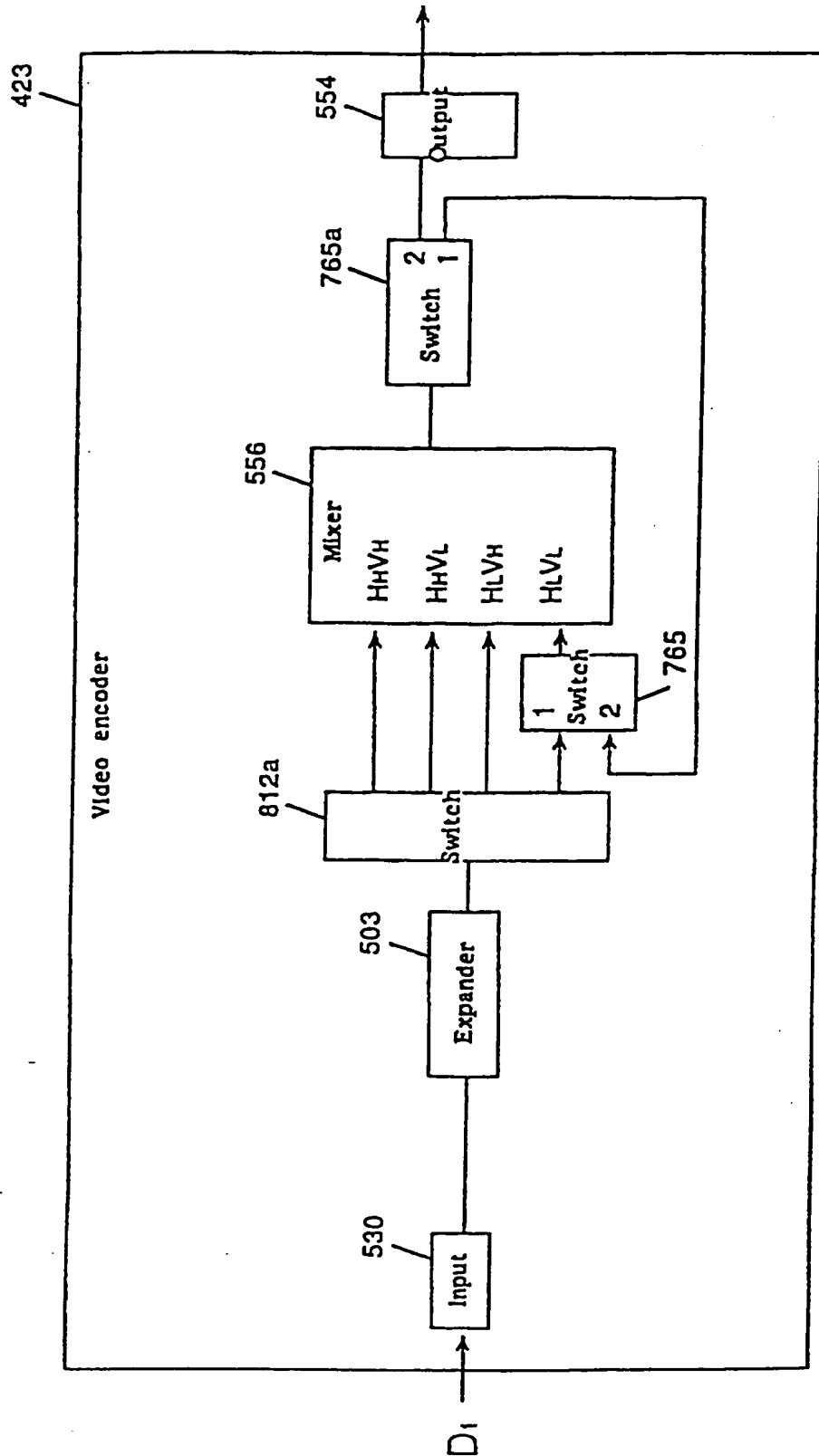


FIG. 83

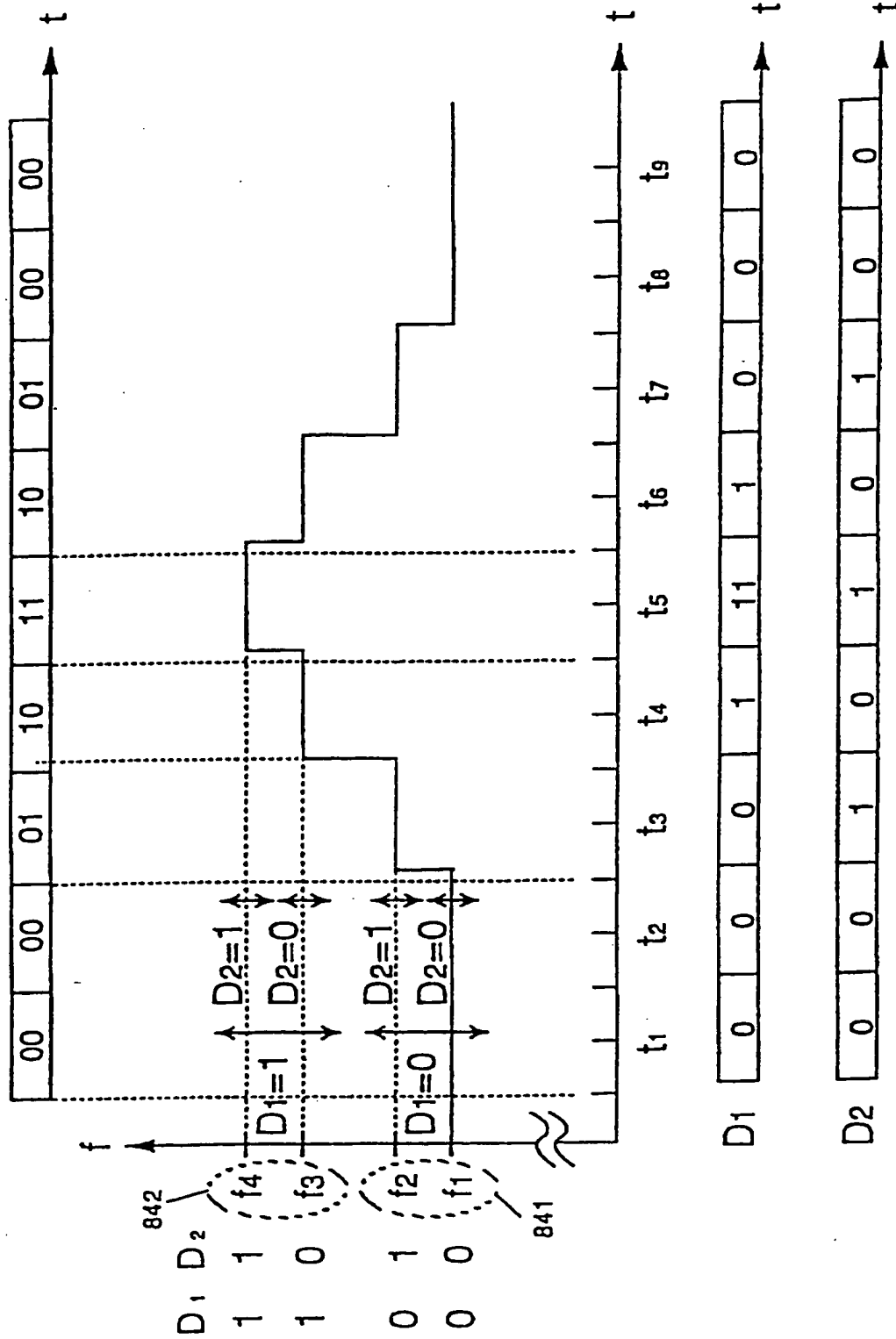


FIG. 84

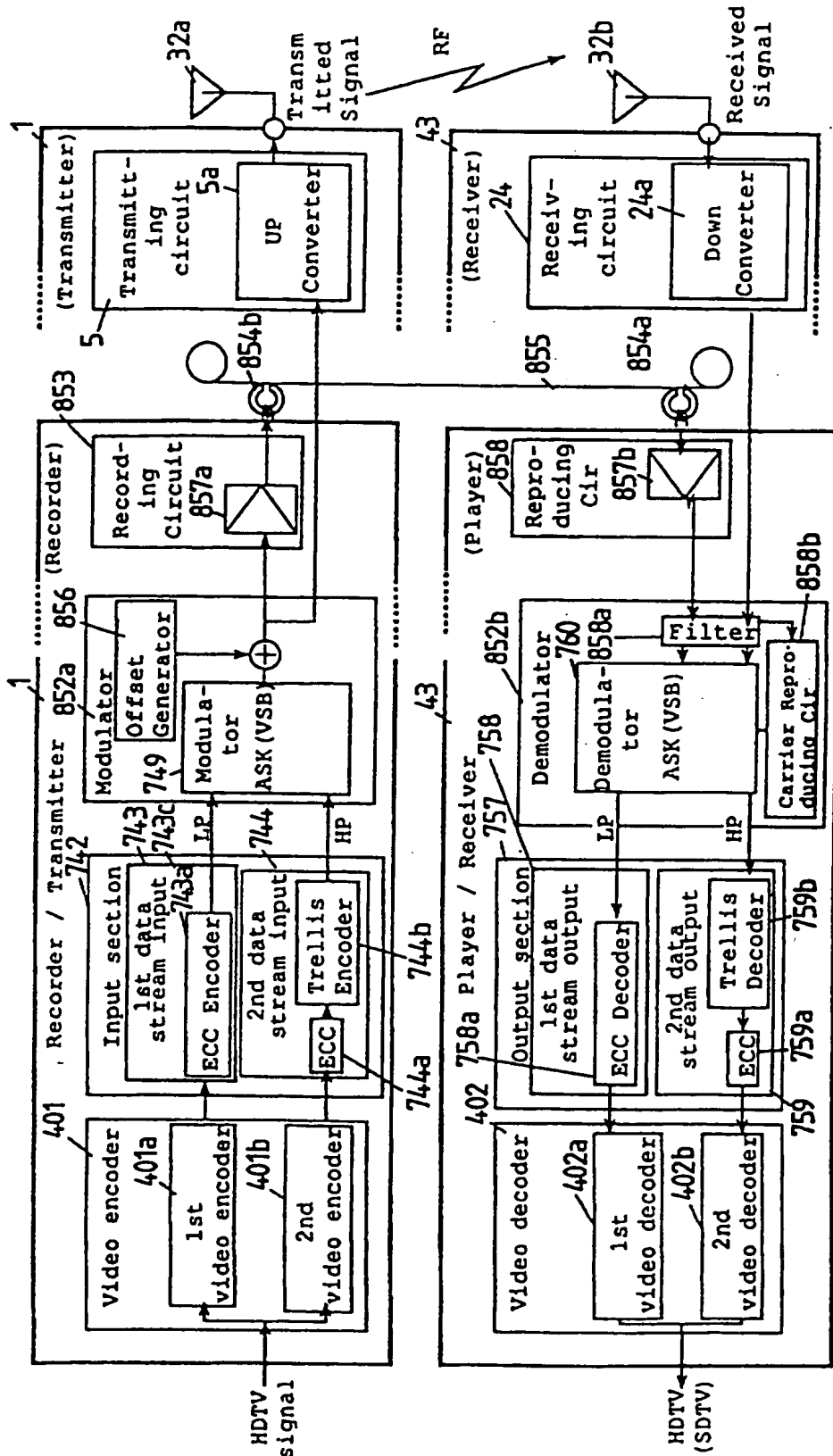
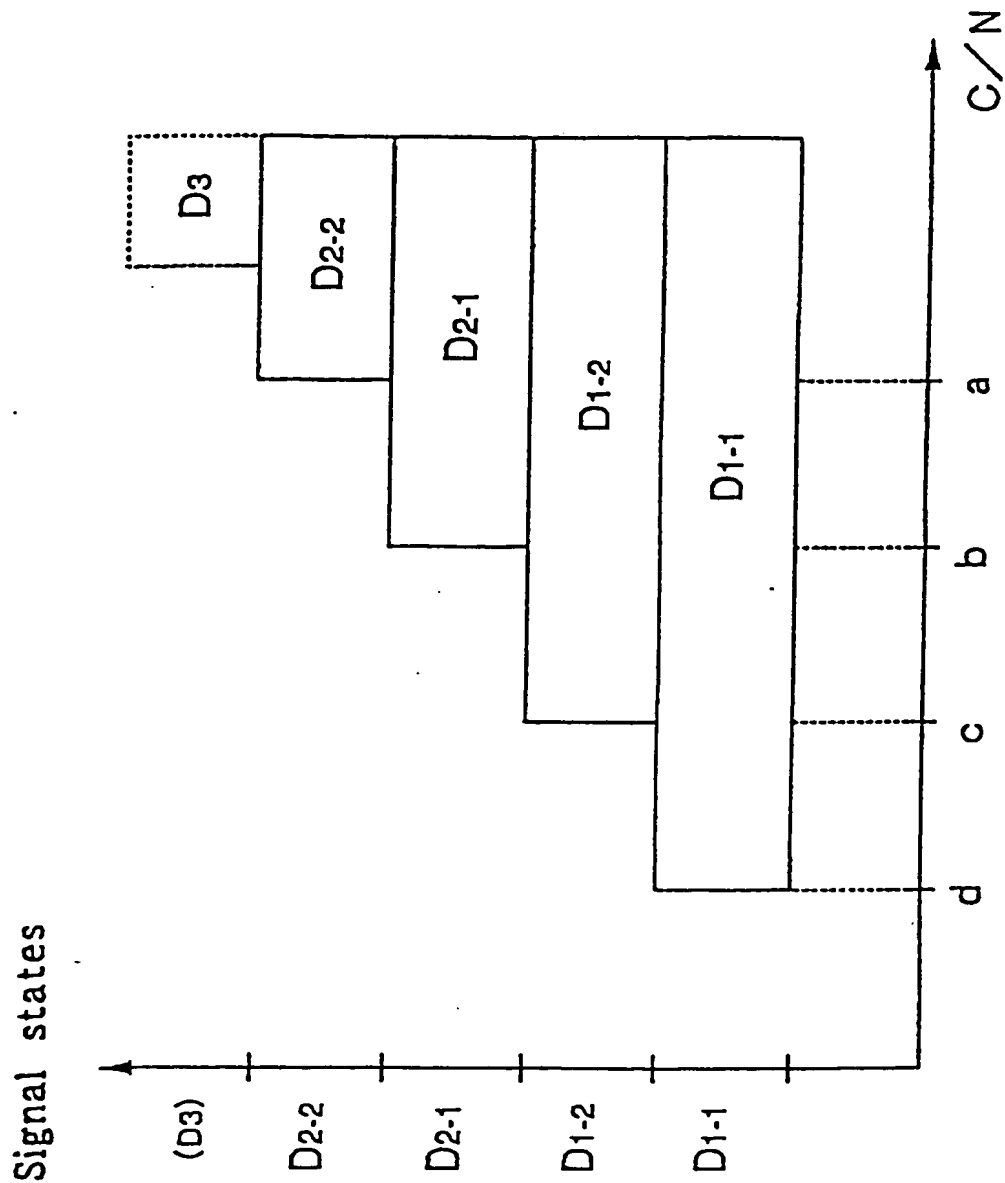


FIG. 85



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FIG. 86

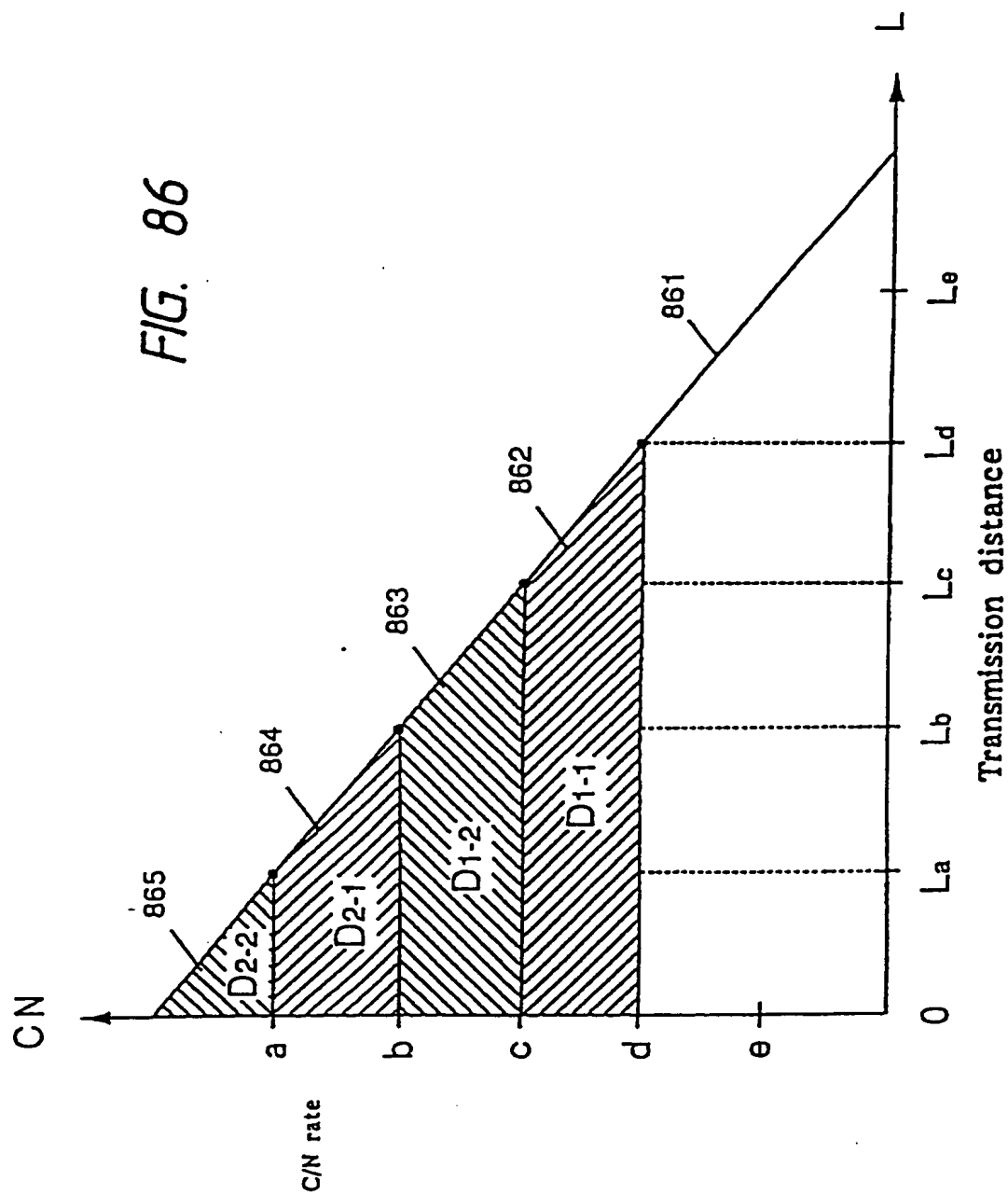


FIG. 87

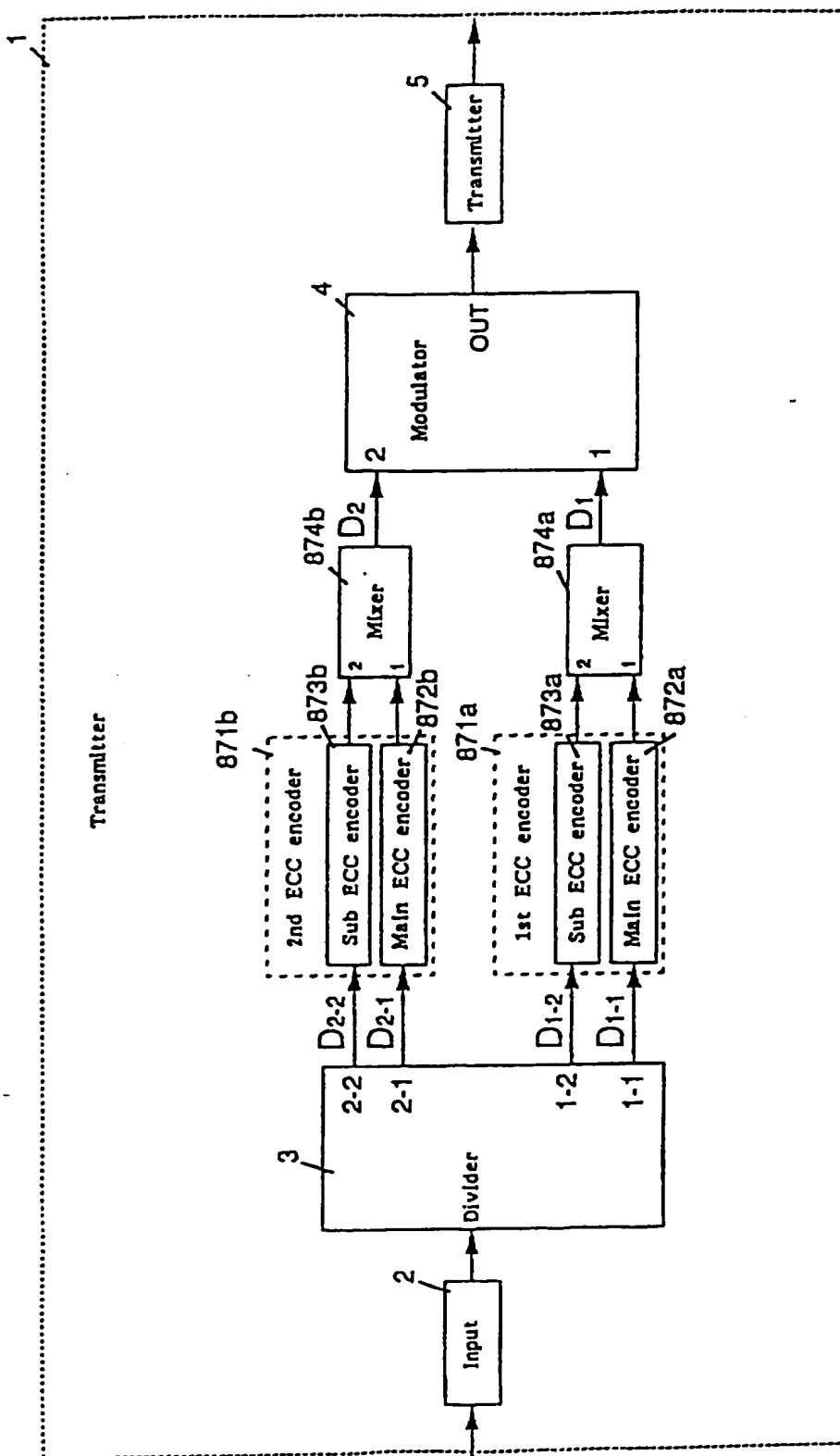
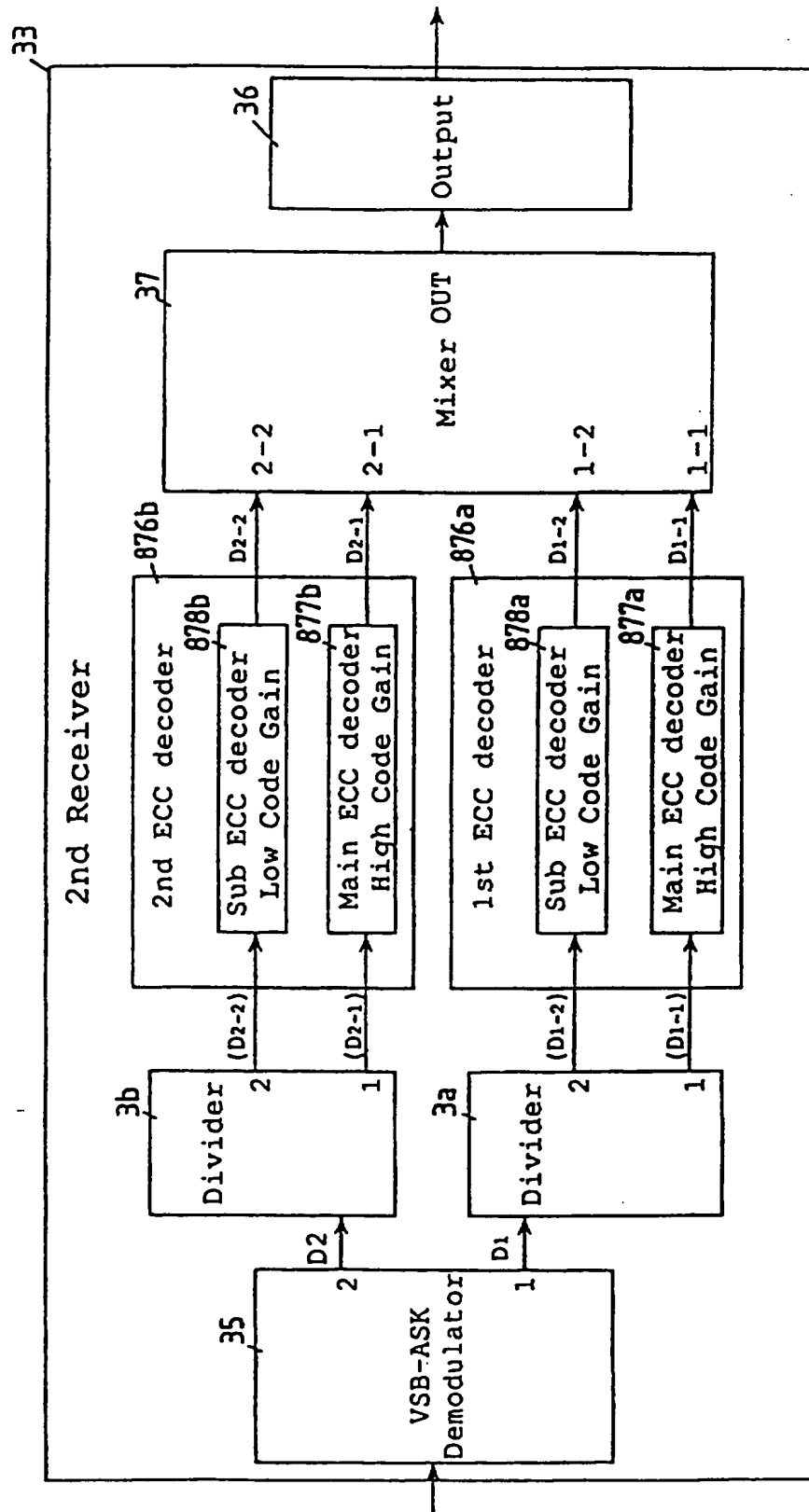
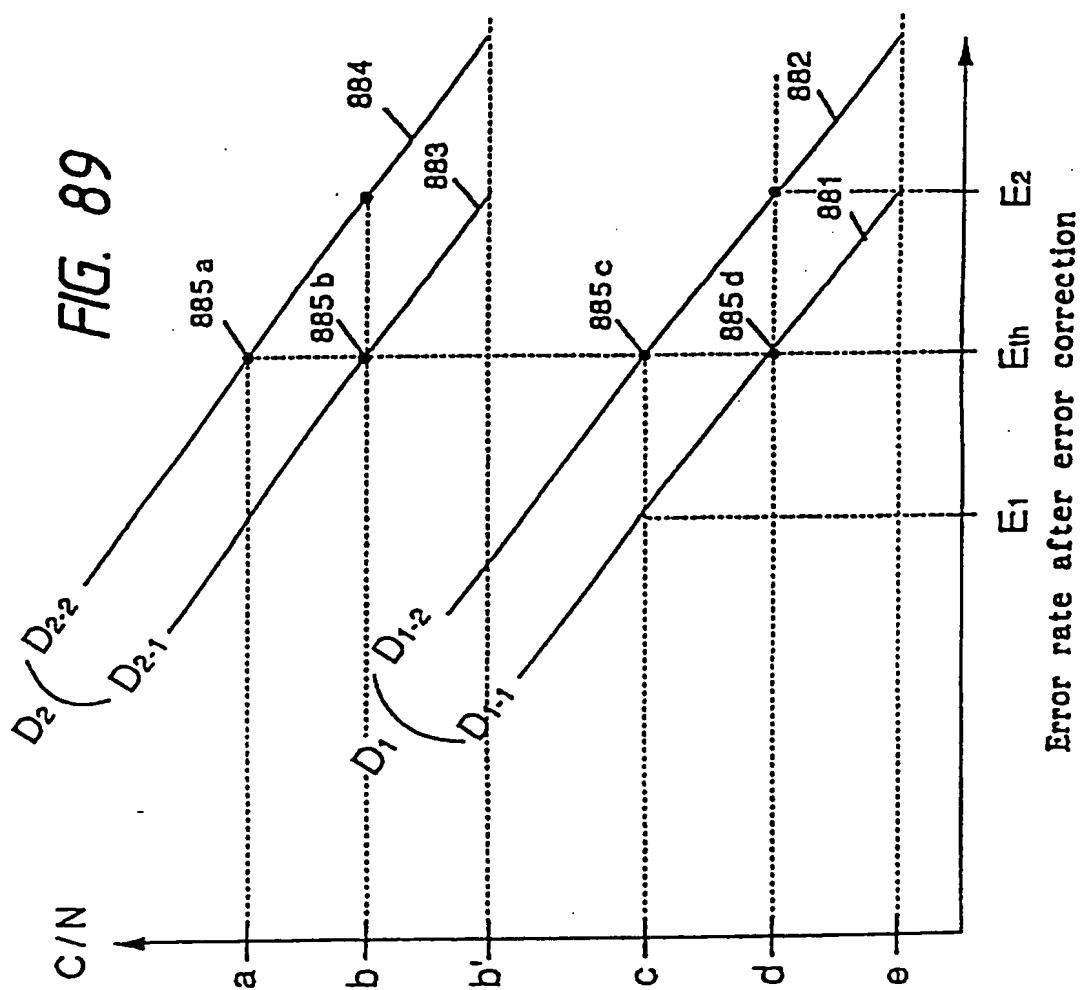


FIG. 88







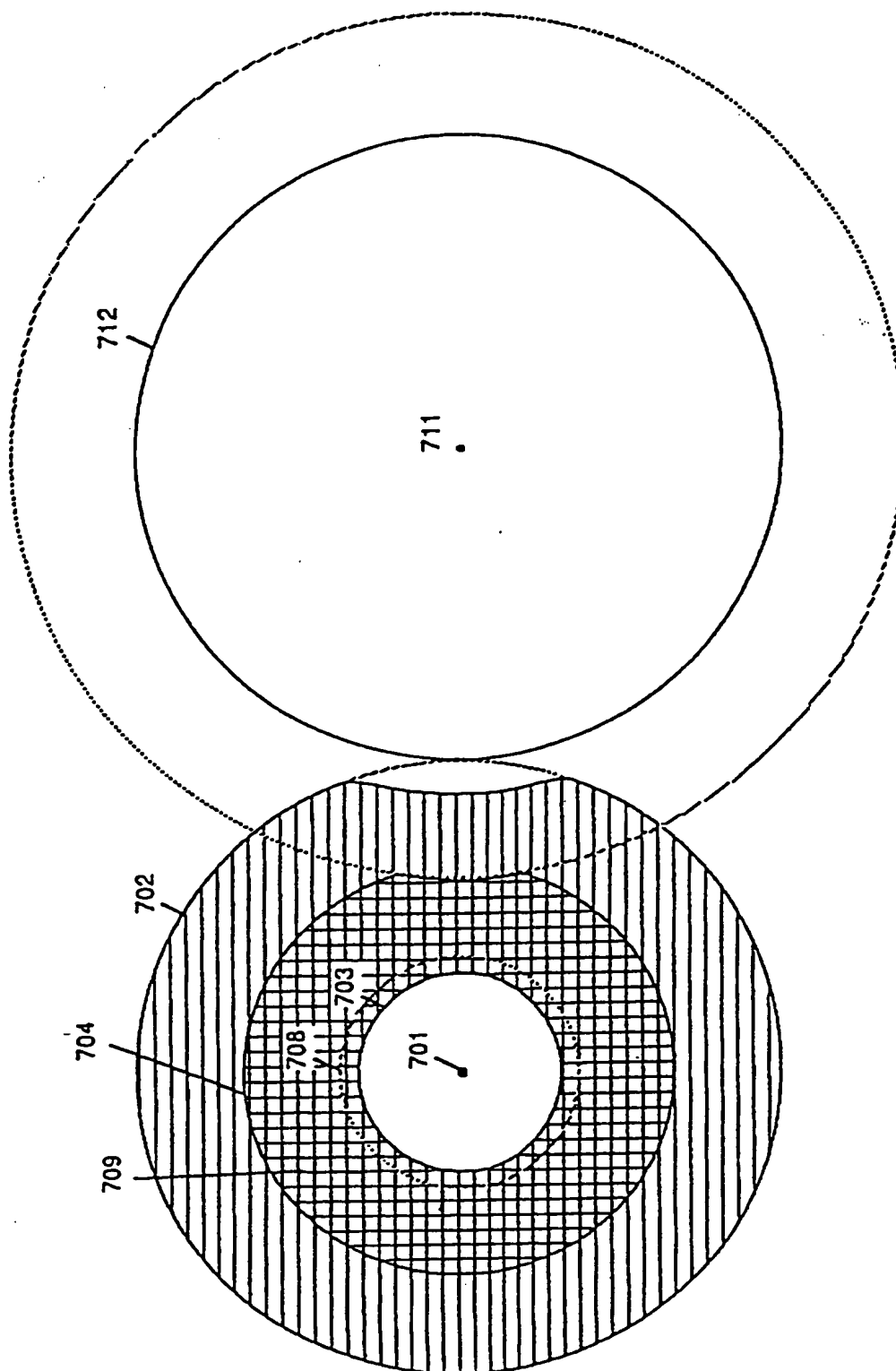
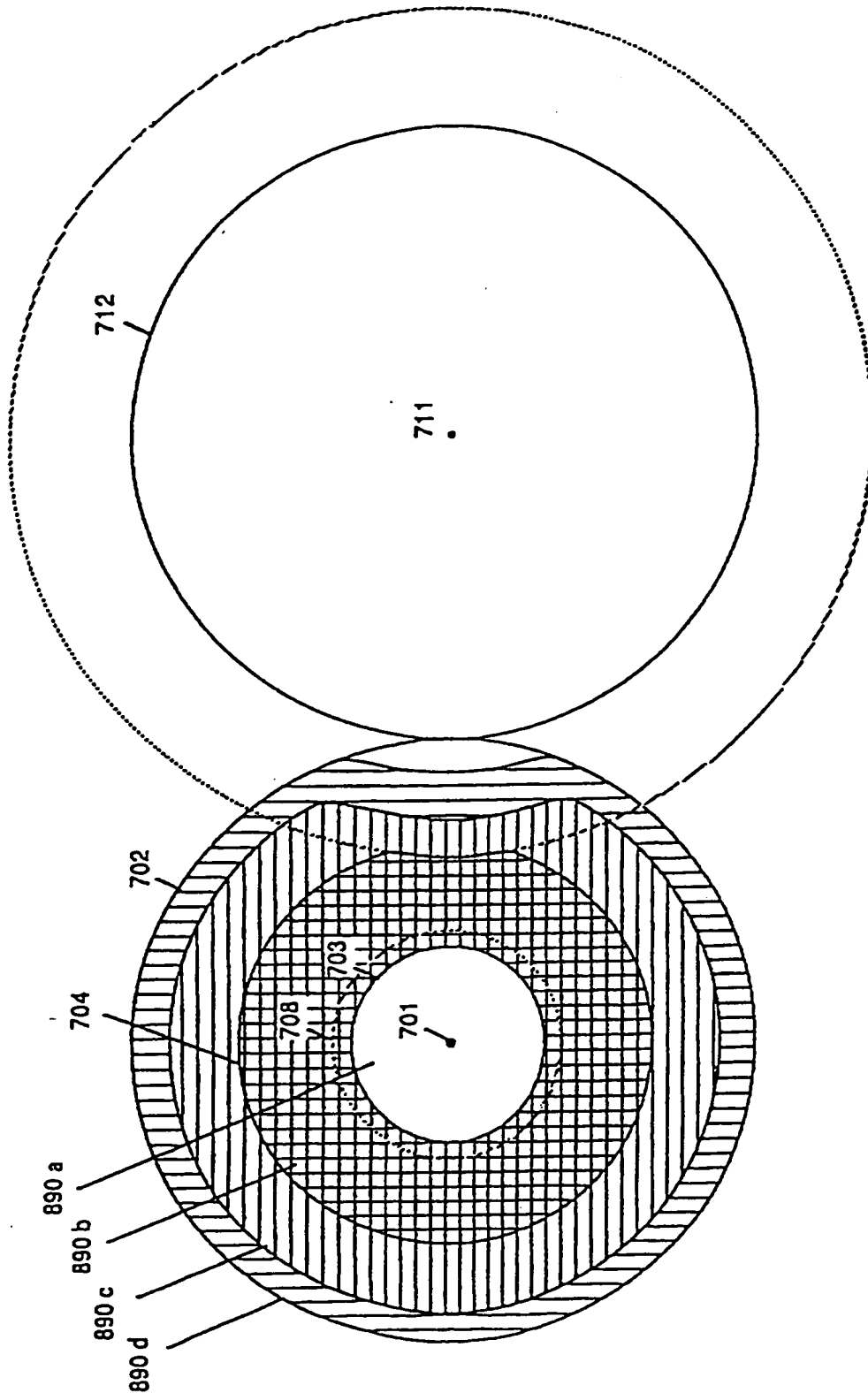


FIG. 91



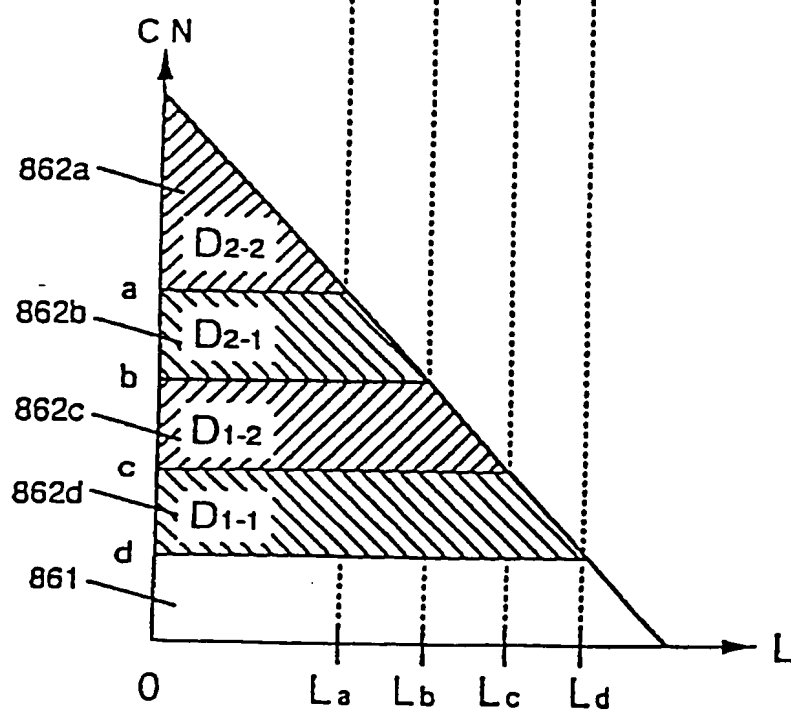


FIG. 93

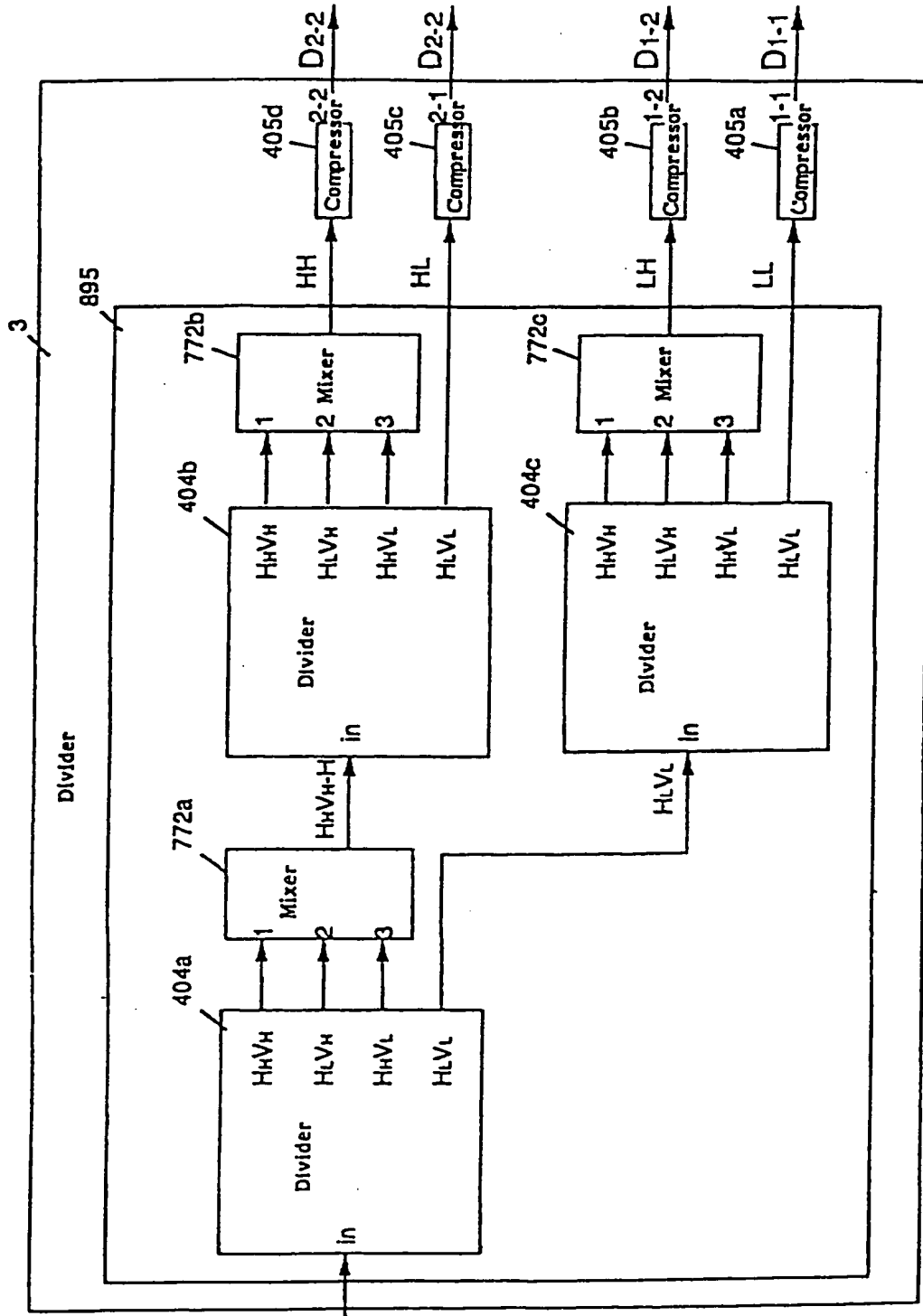
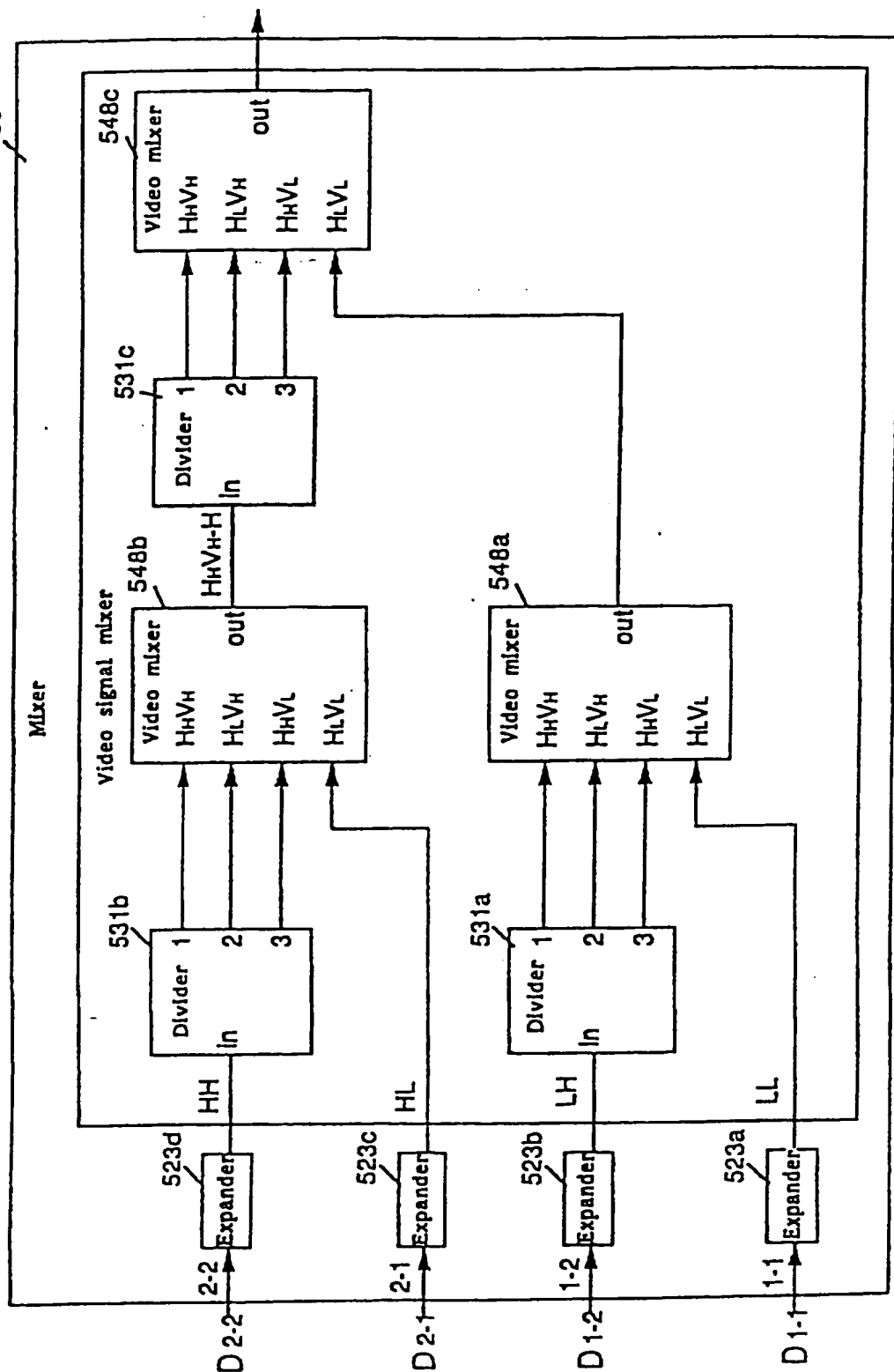
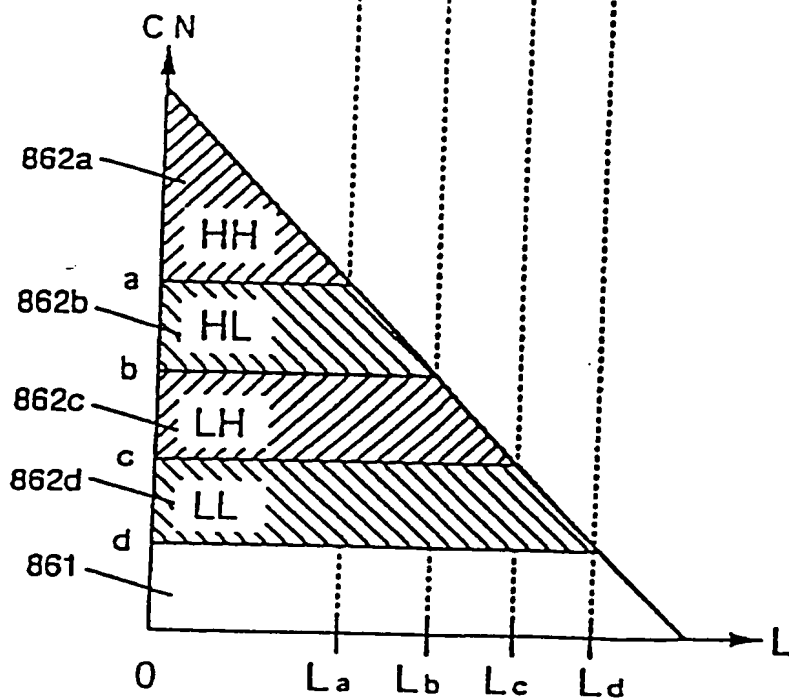
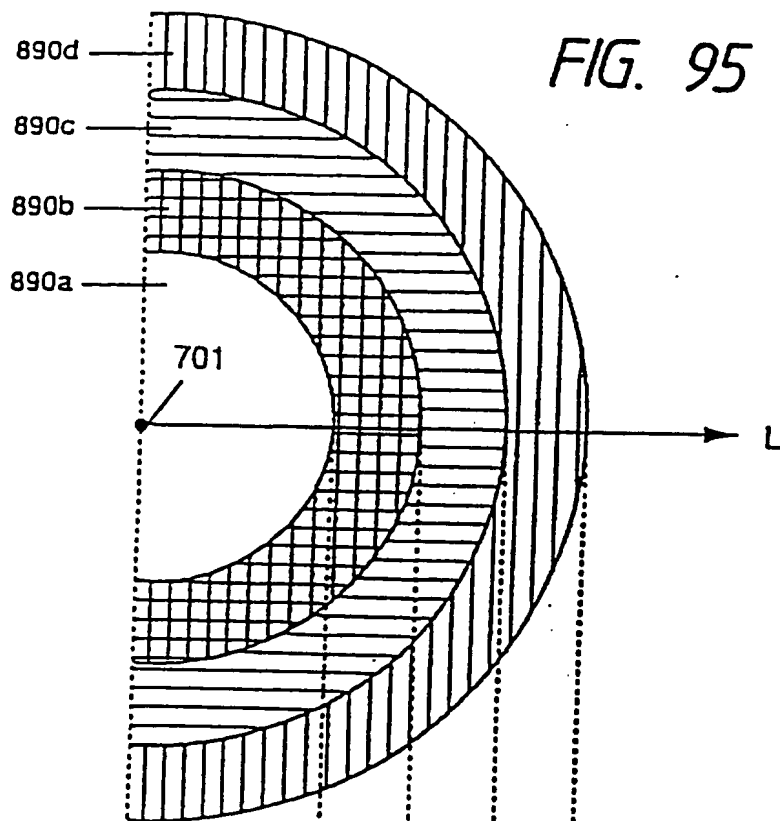


FIG. 94





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FIG. 96

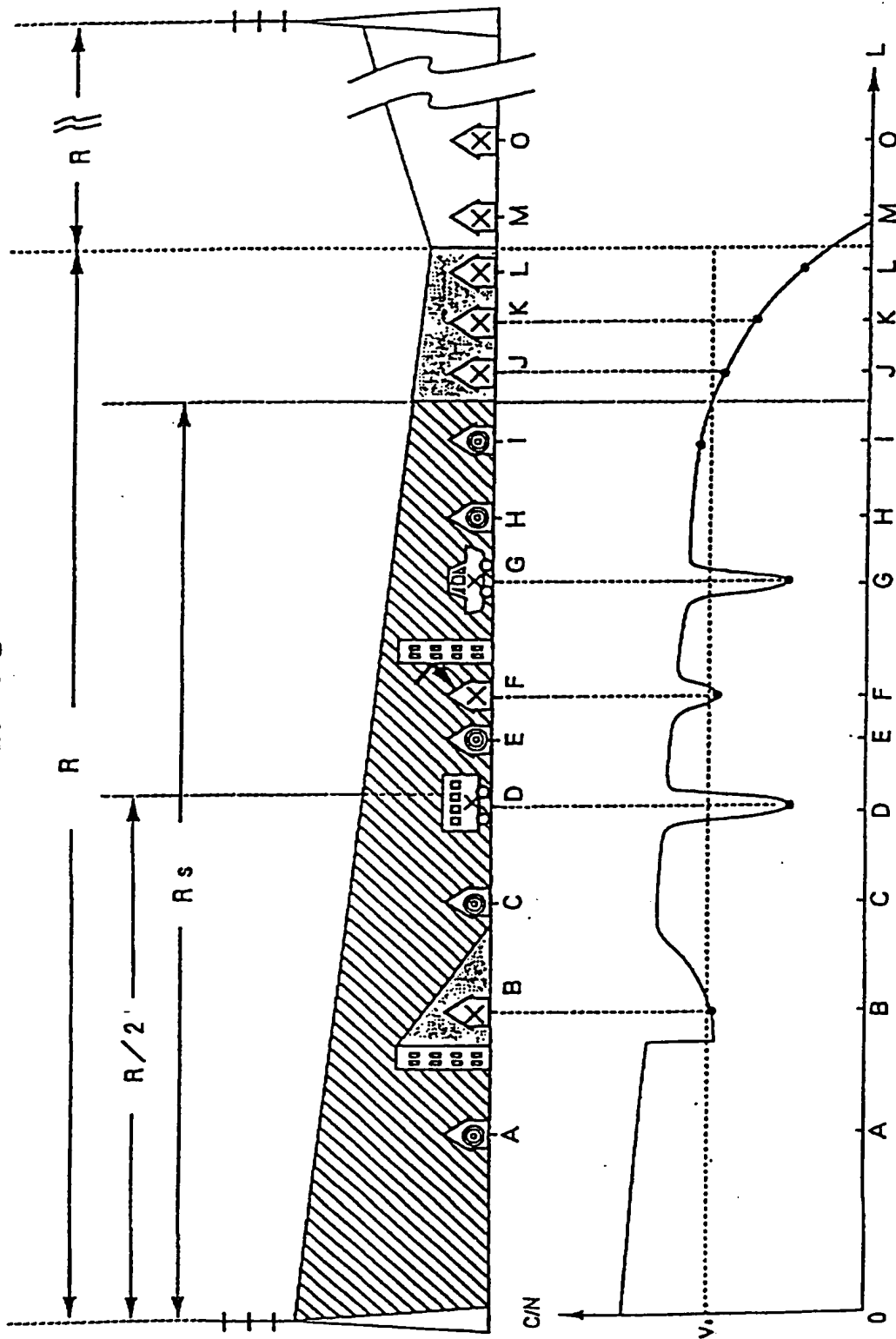




FIG. 97

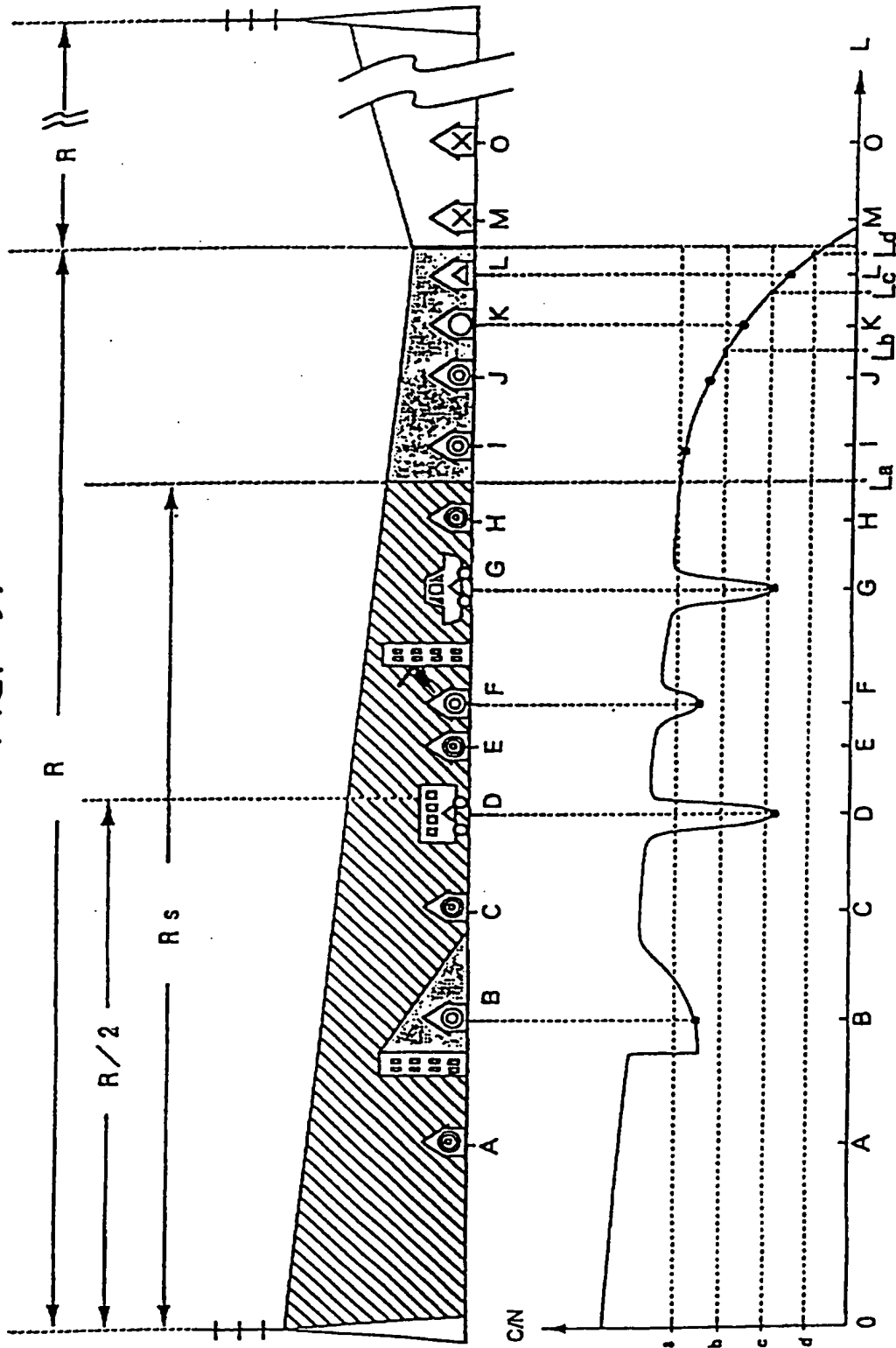
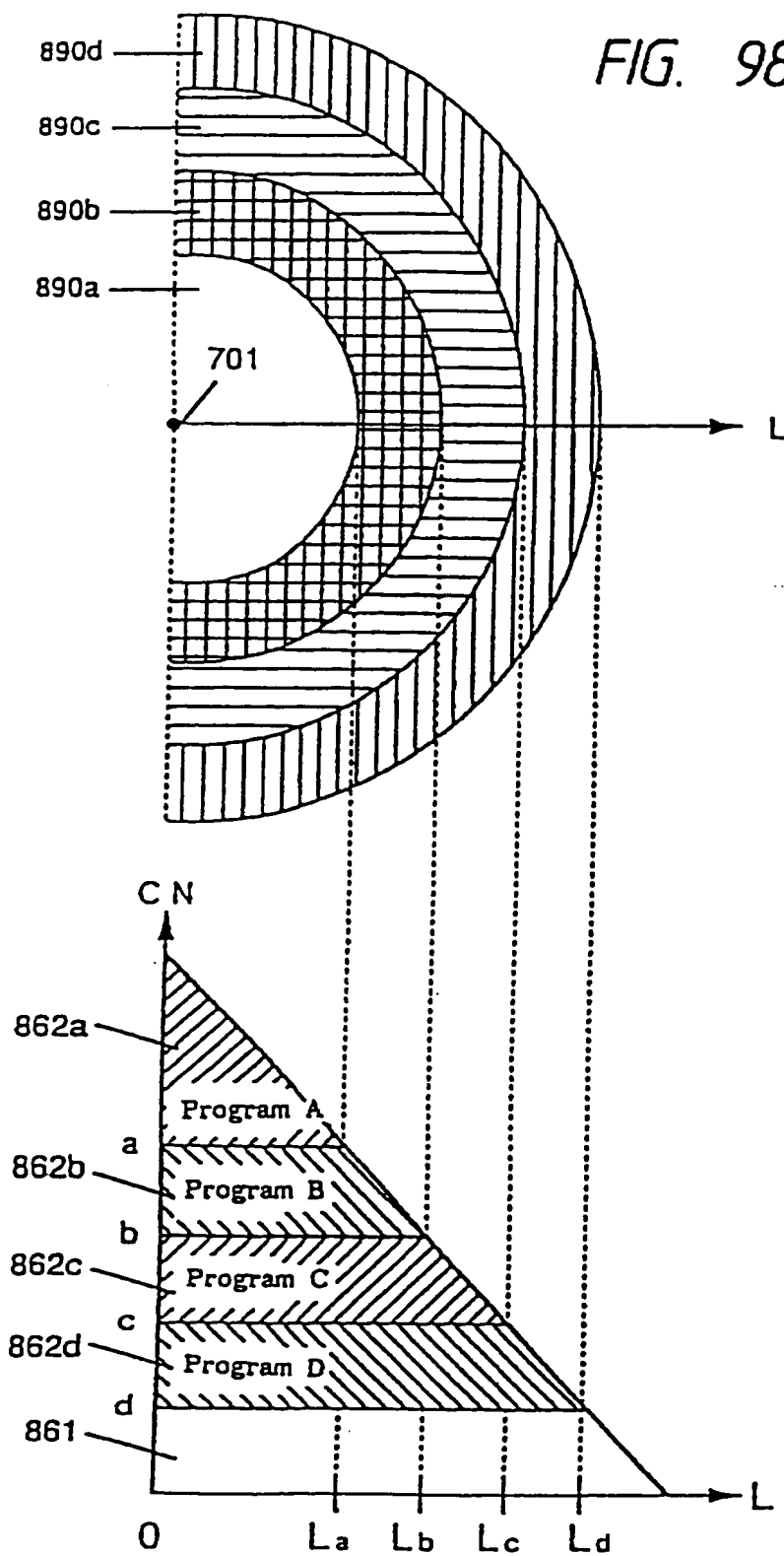


FIG. 98



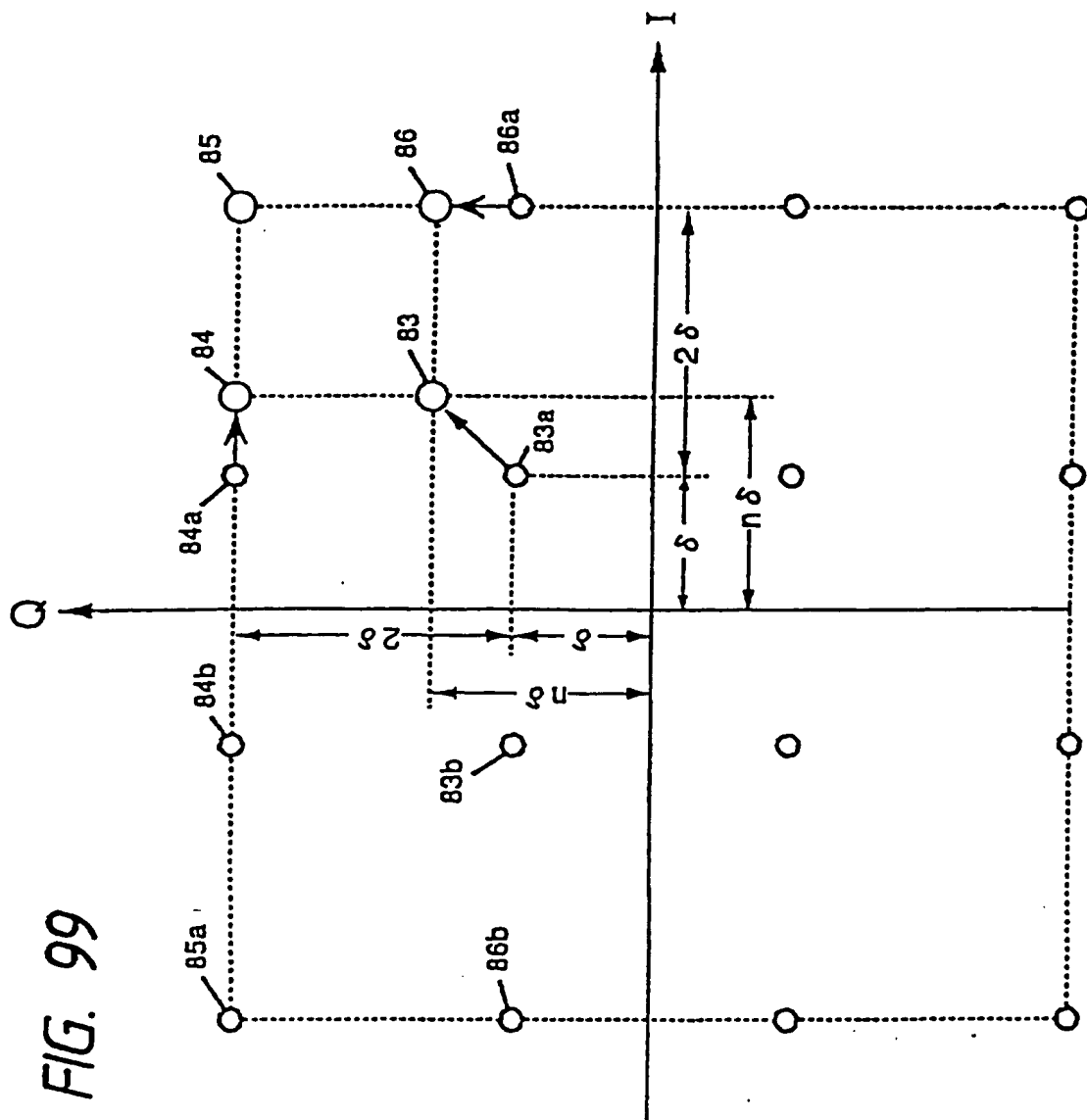
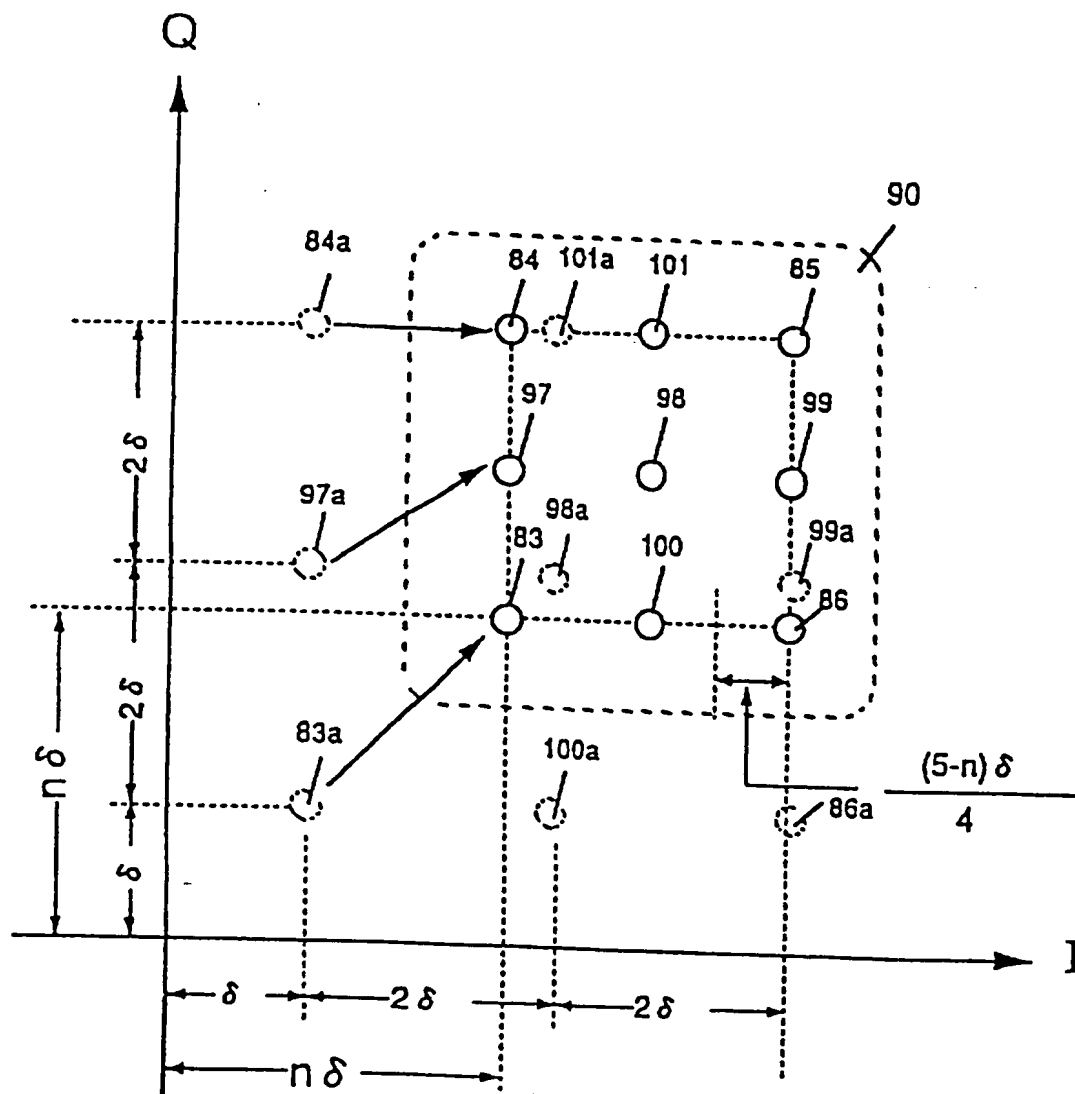


FIG. 100



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FIG. 101

$P_e$

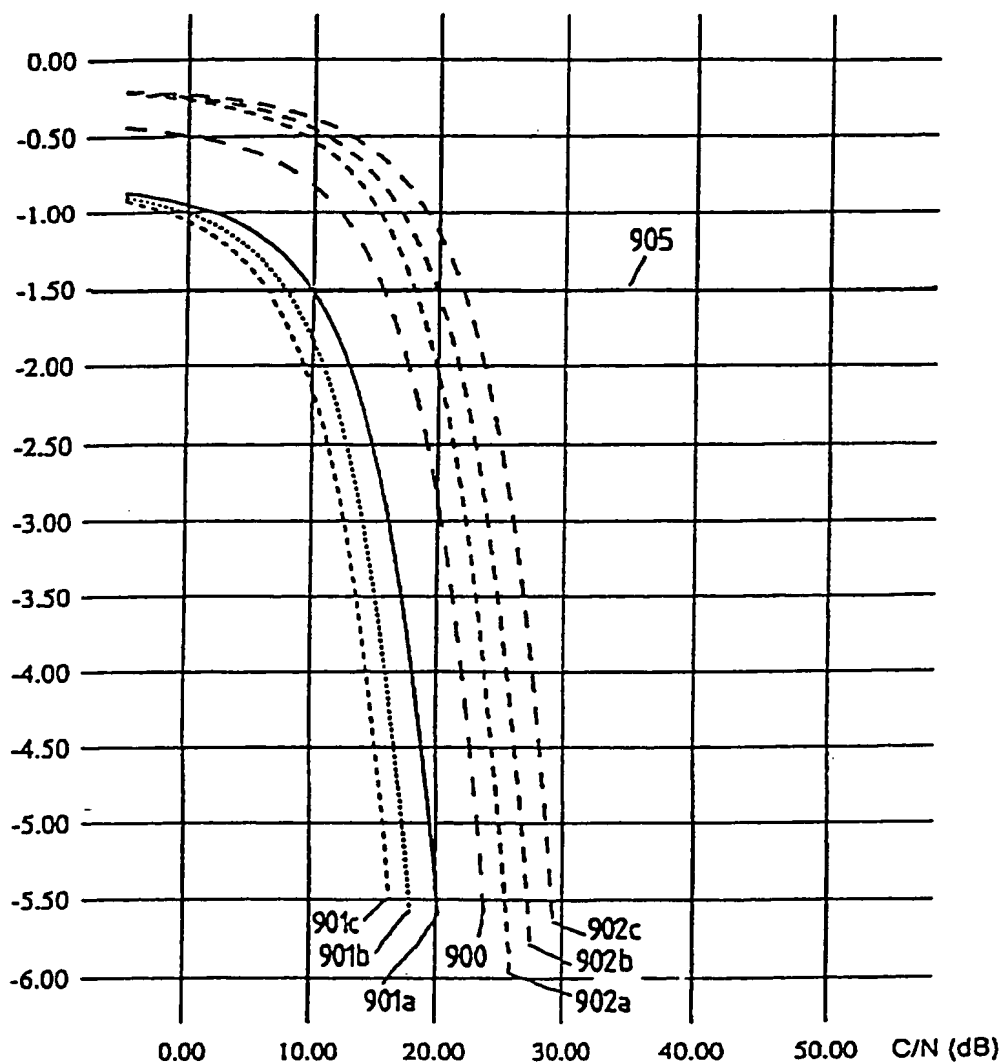


FIG. 102

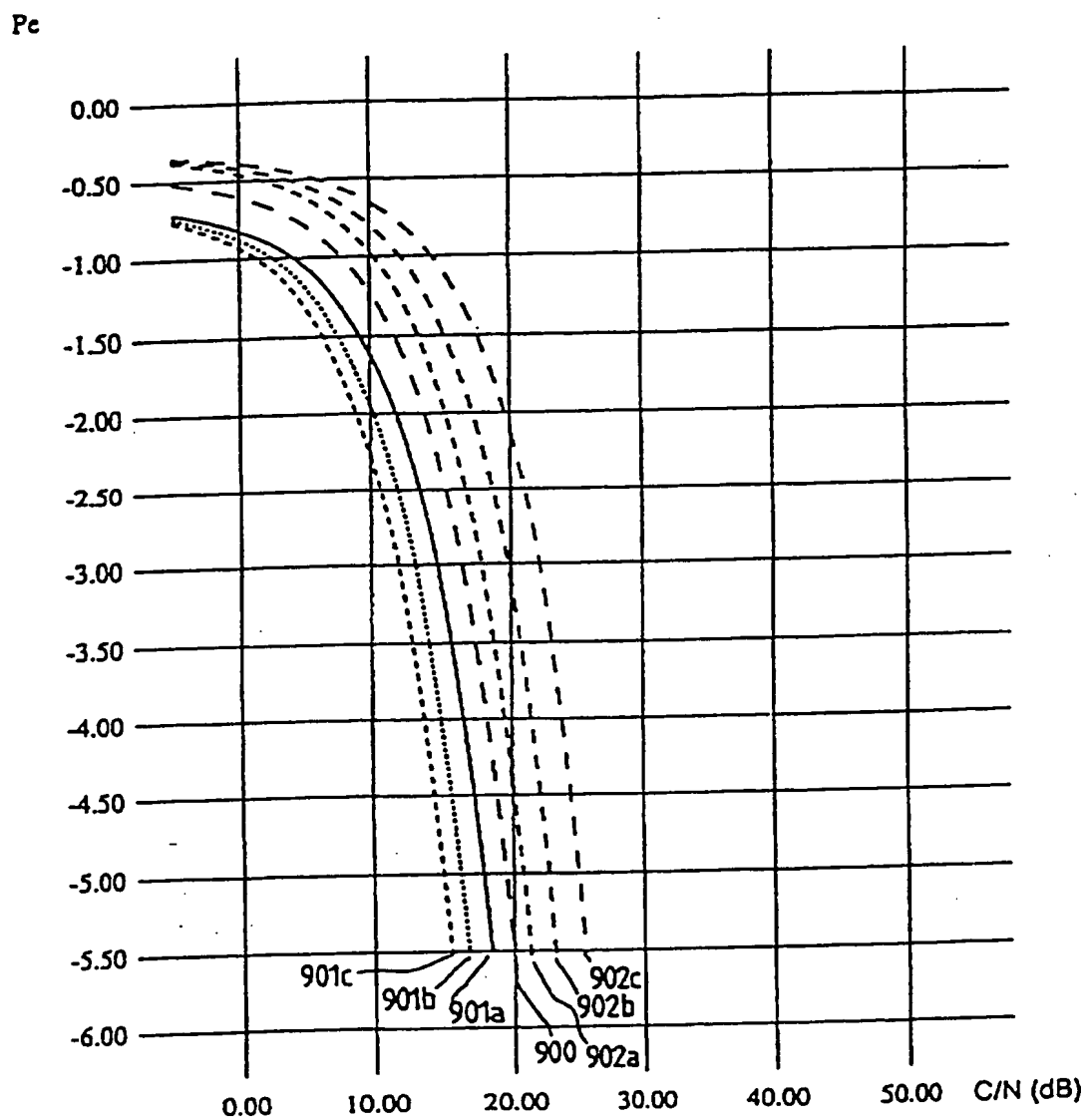


FIG. 103

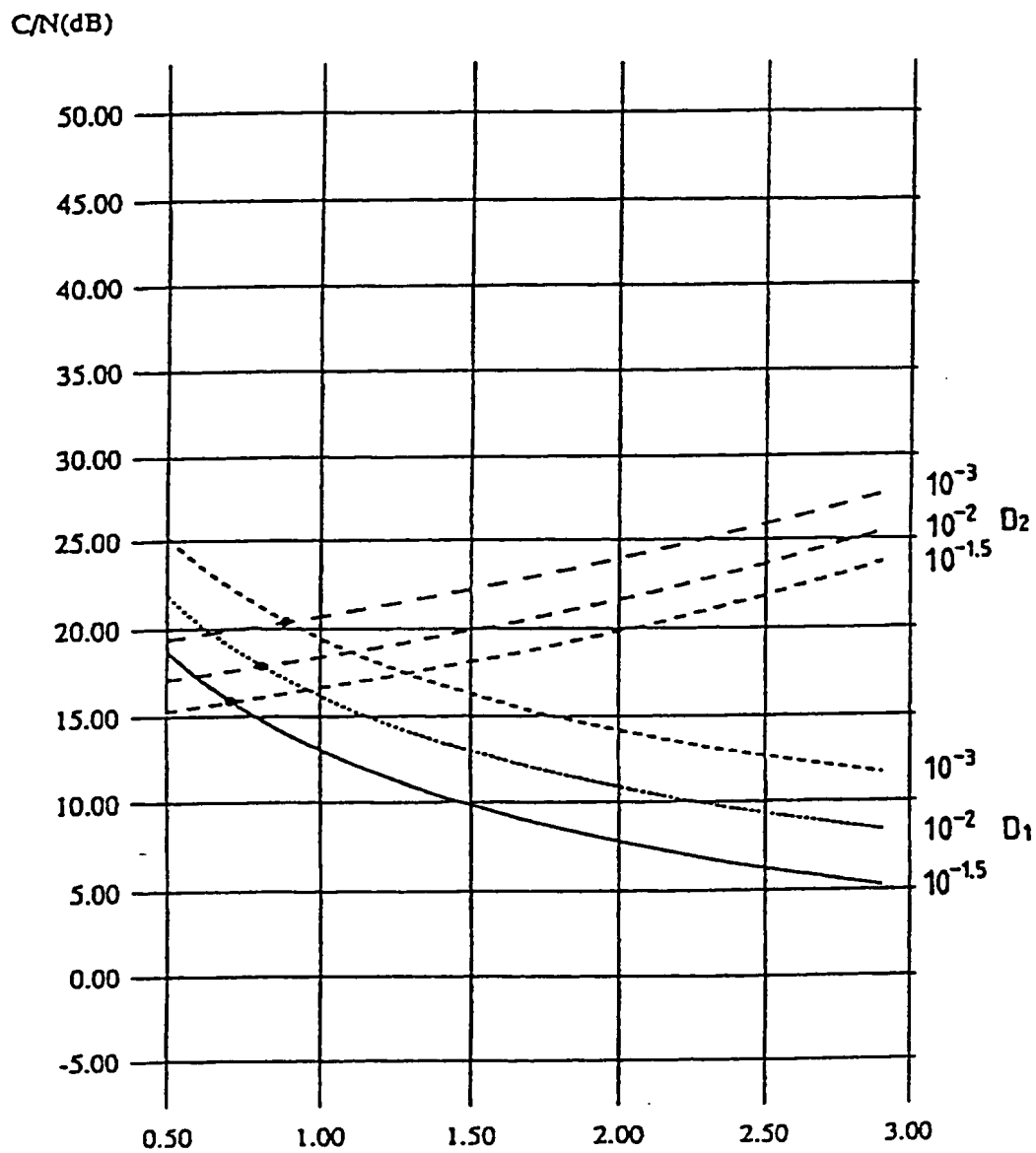
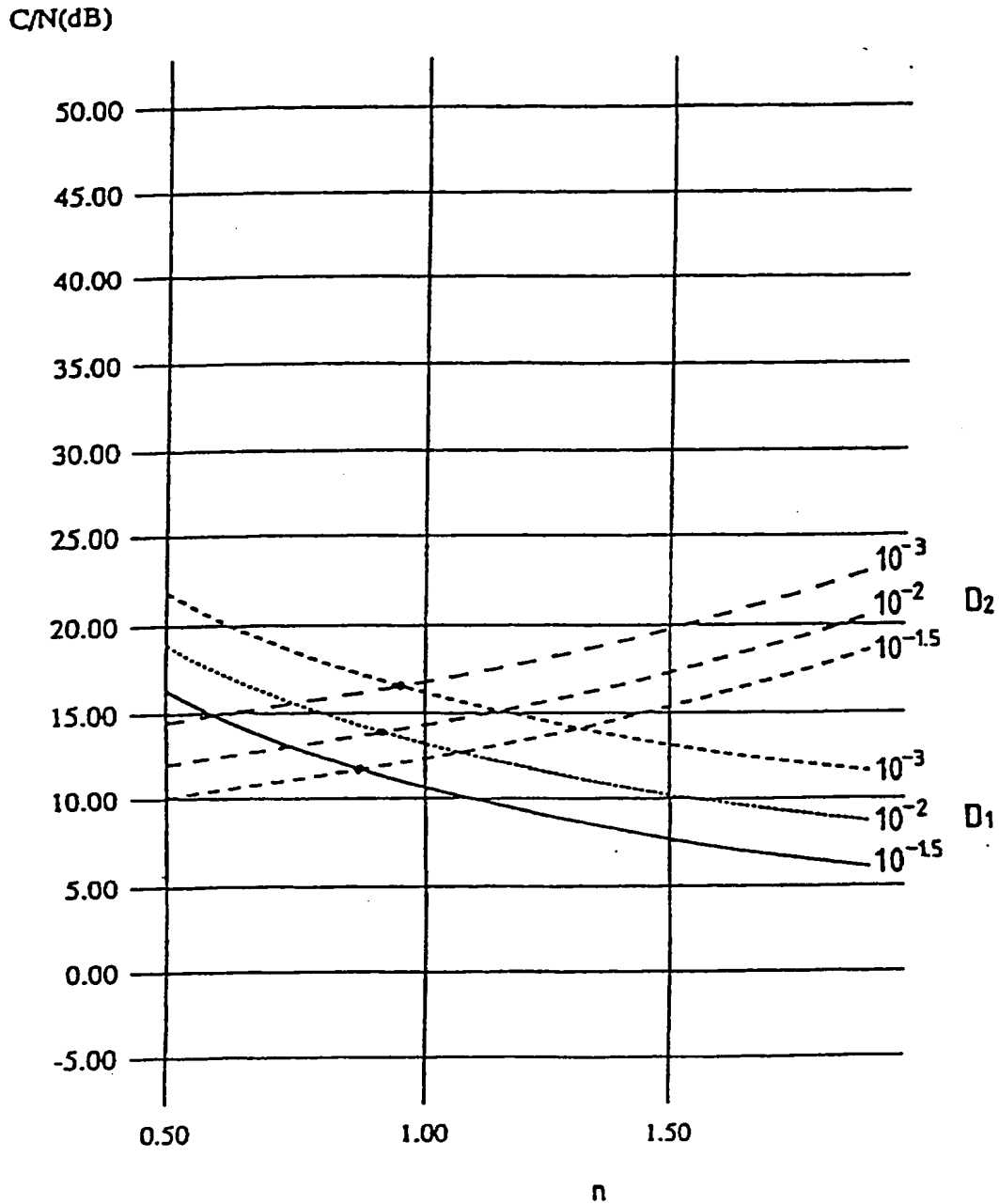
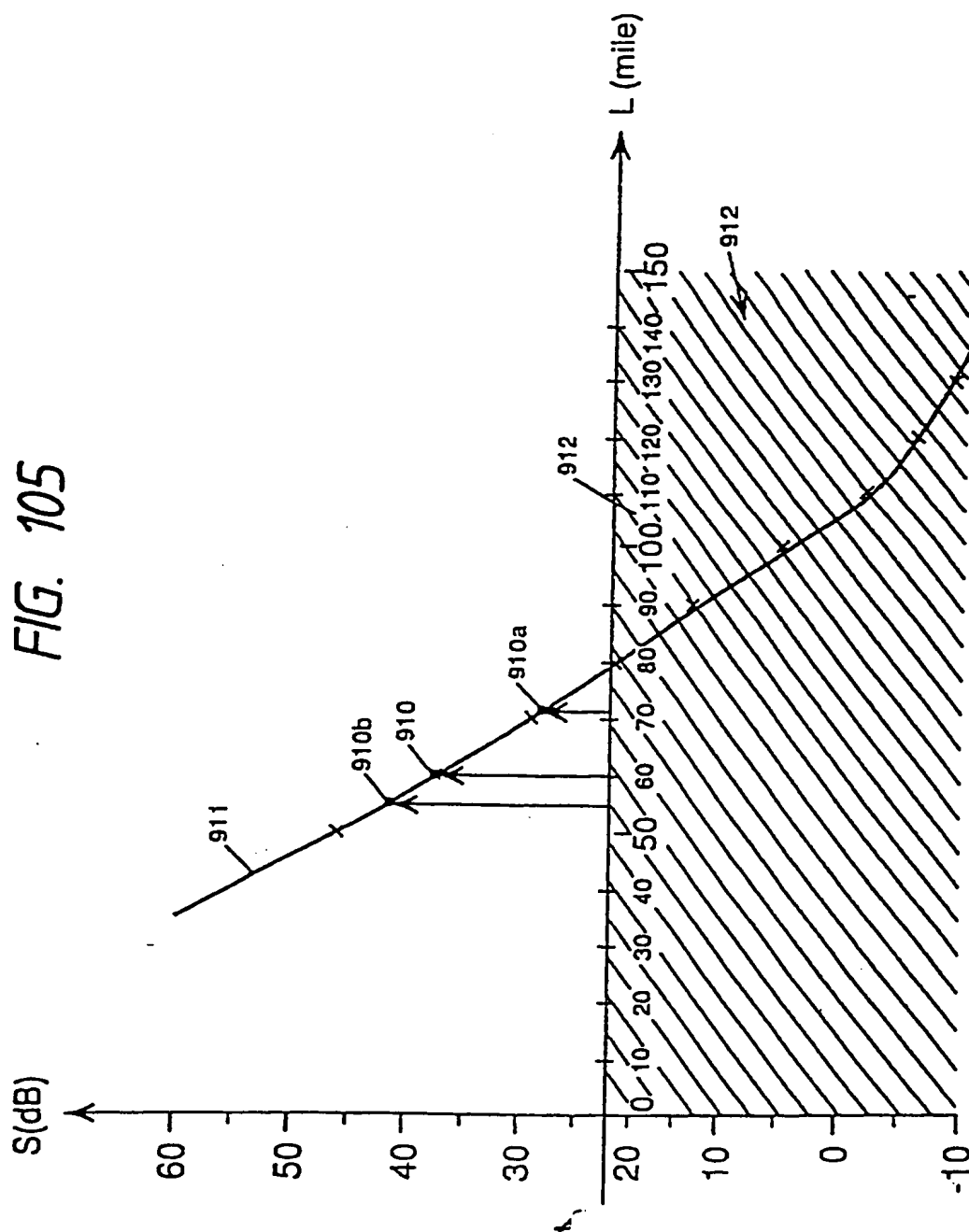


FIG. 104







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FIG. 106

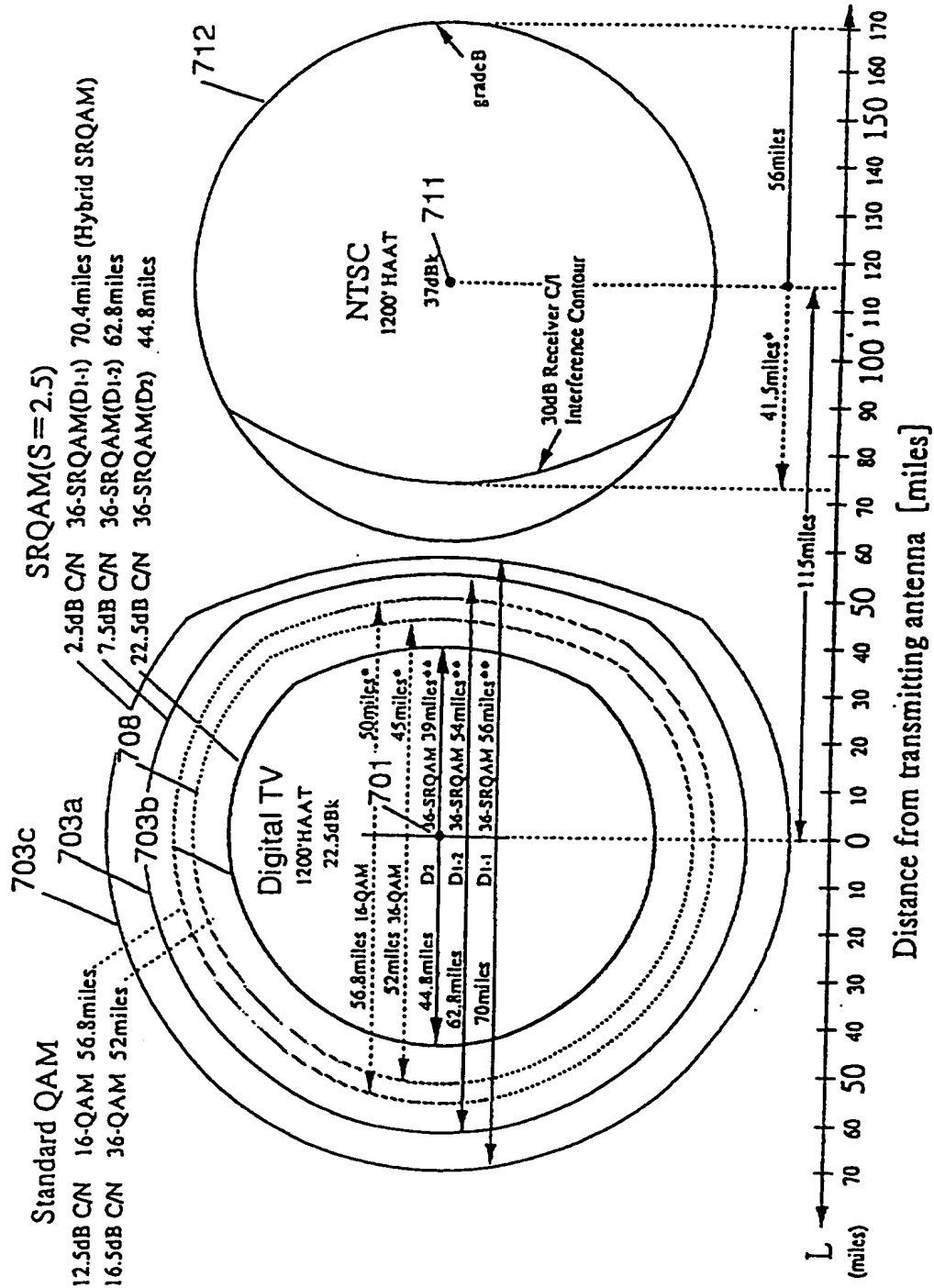


FIG. 107

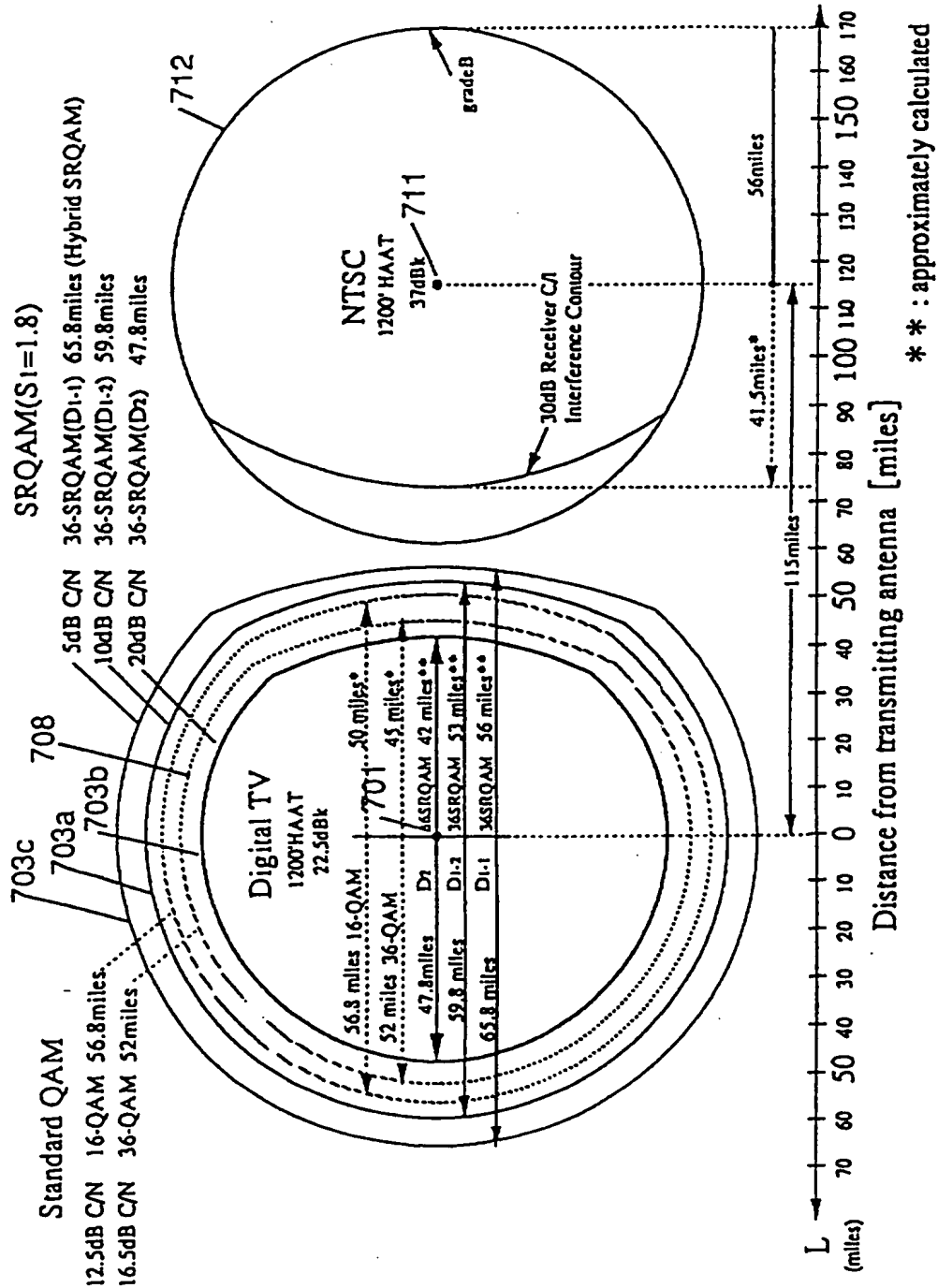


FIG. 108(a)

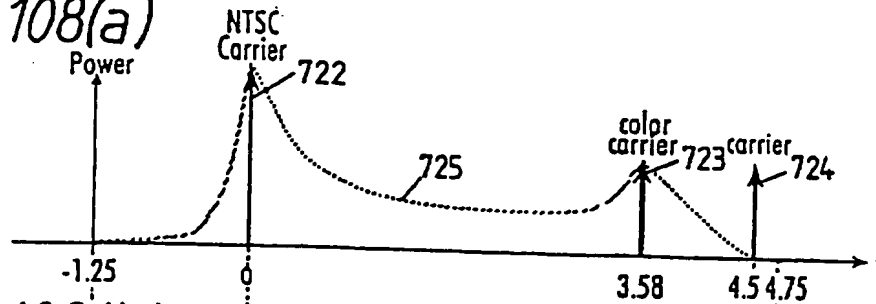


FIG. 108(b)

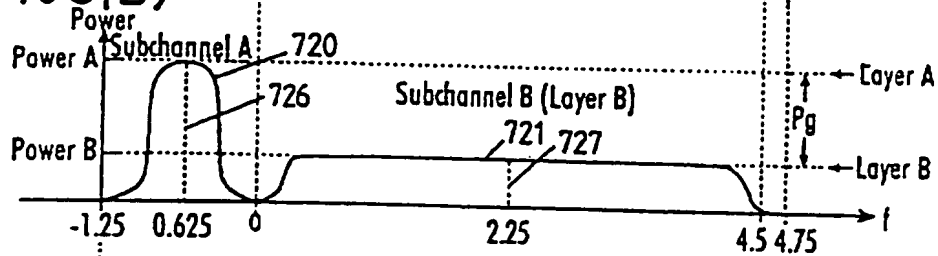


FIG. 108(c)

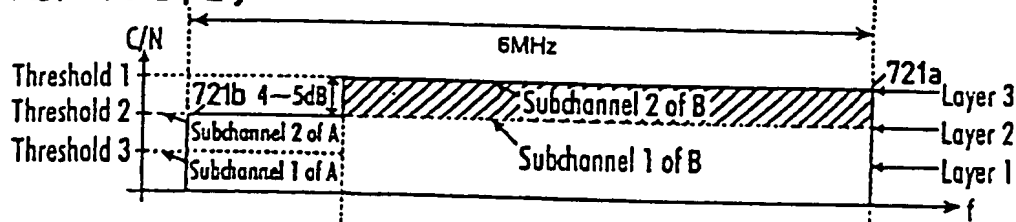


FIG. 108(d)

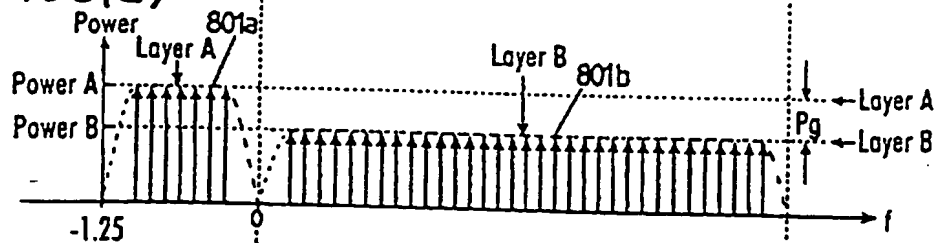
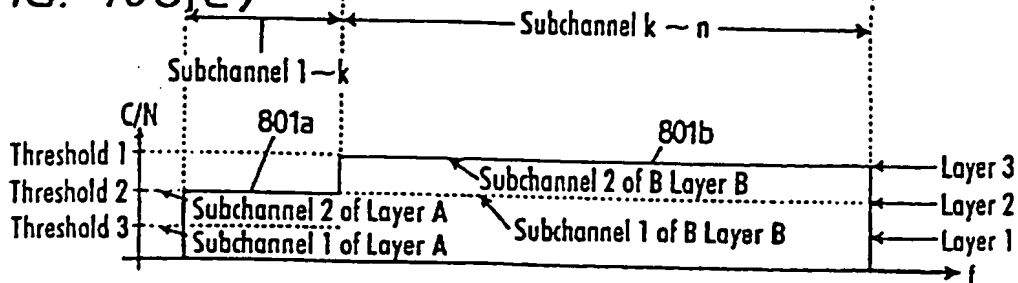


FIG. 108(e)



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FIG. 109

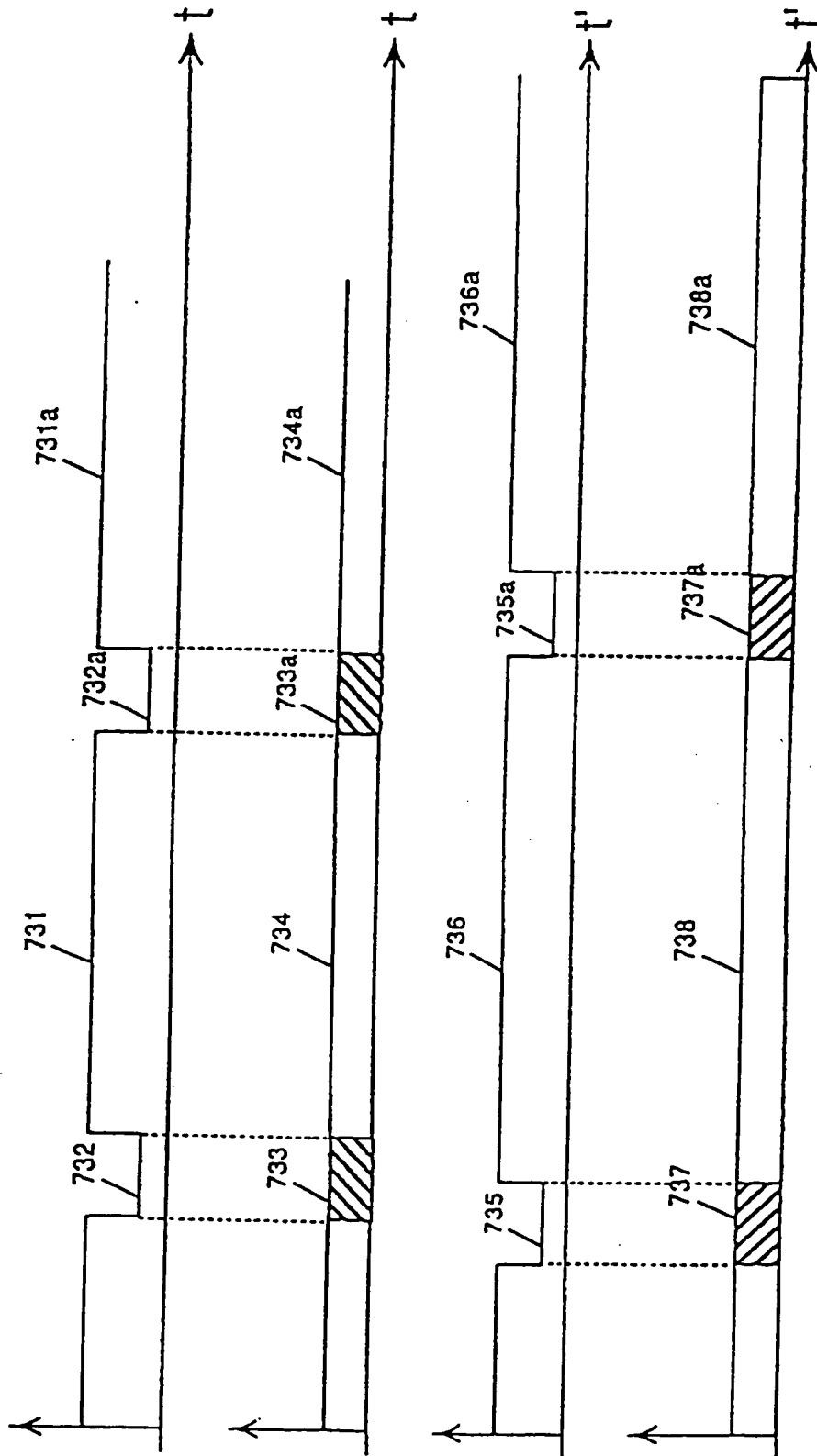


FIG. 110

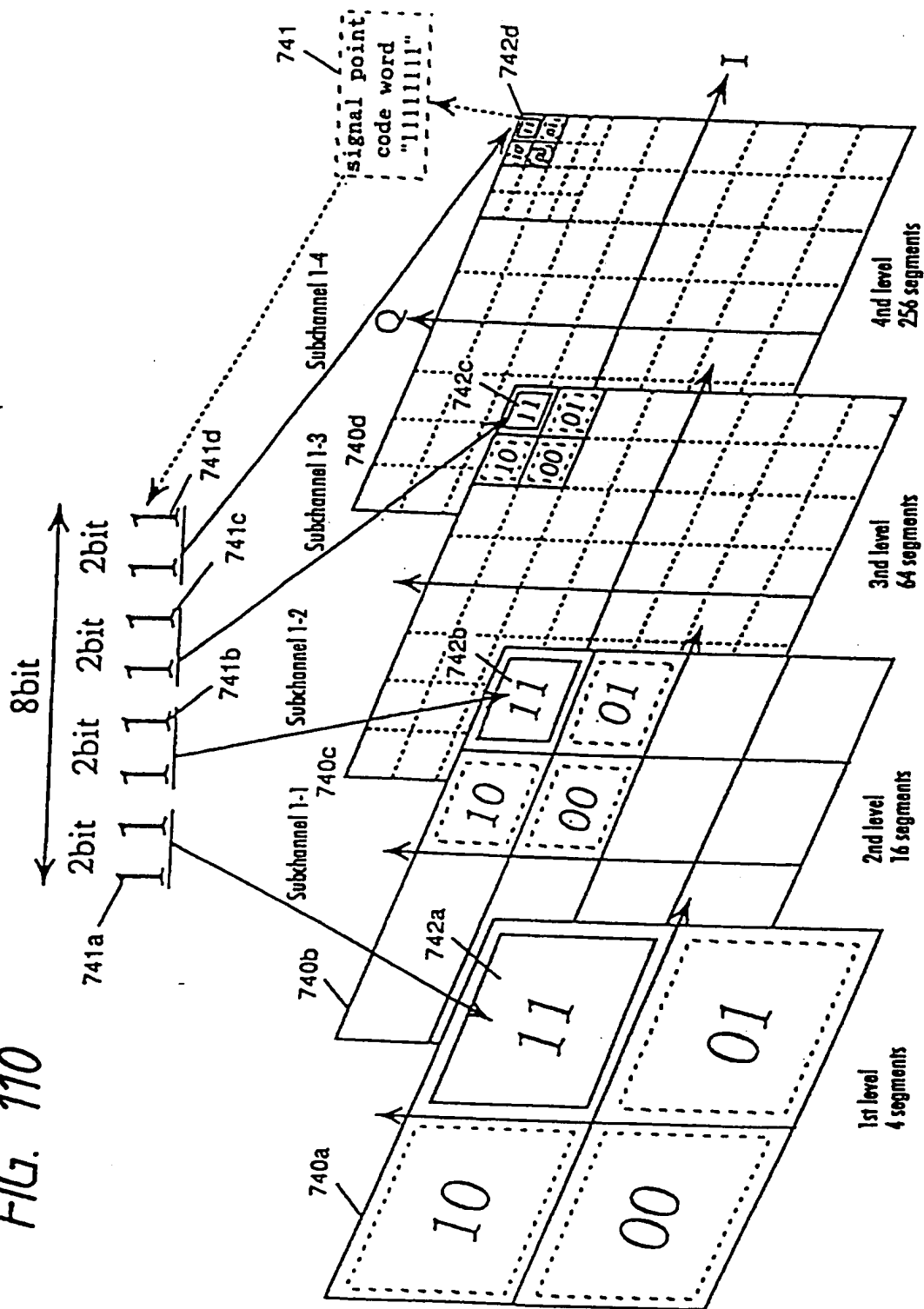
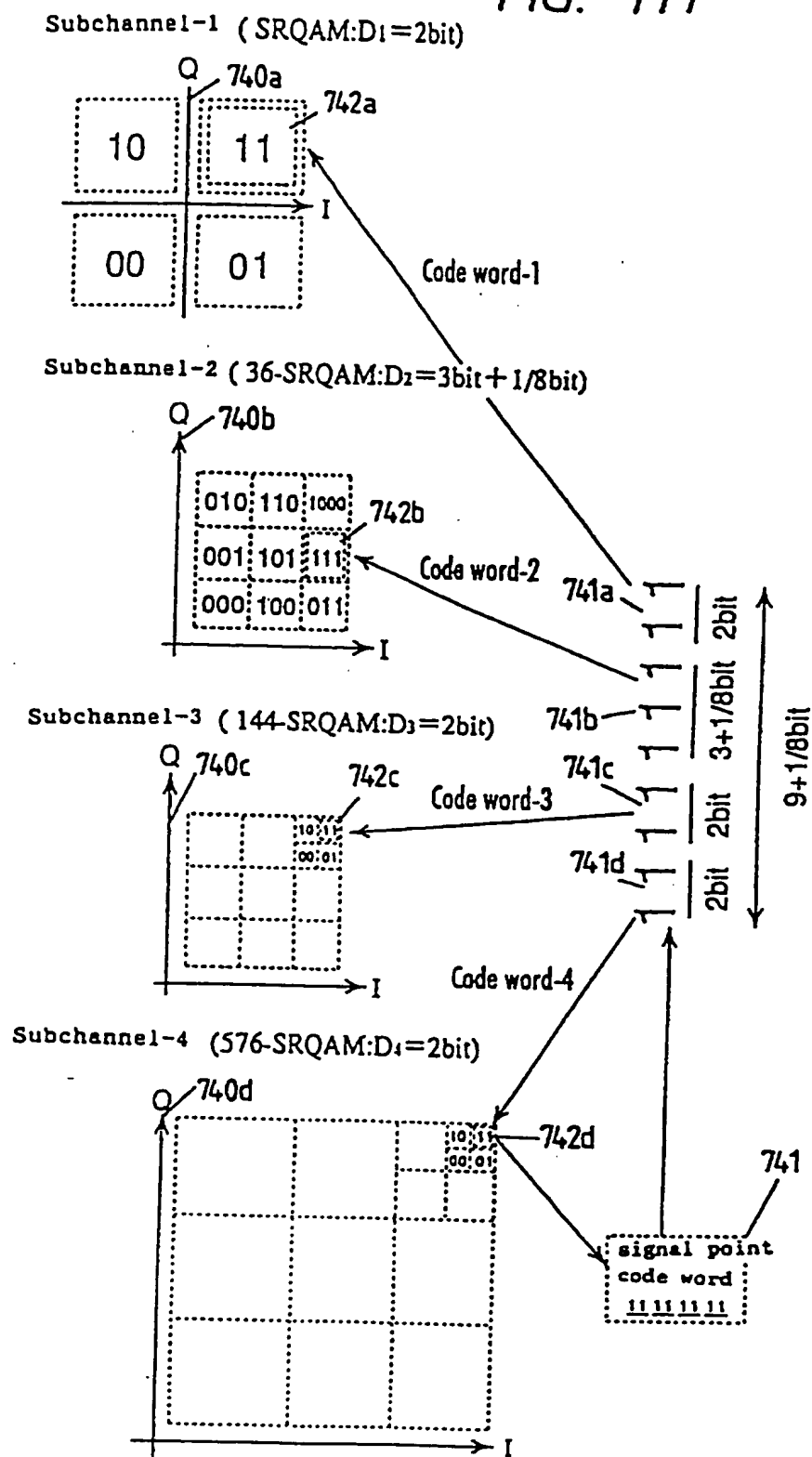
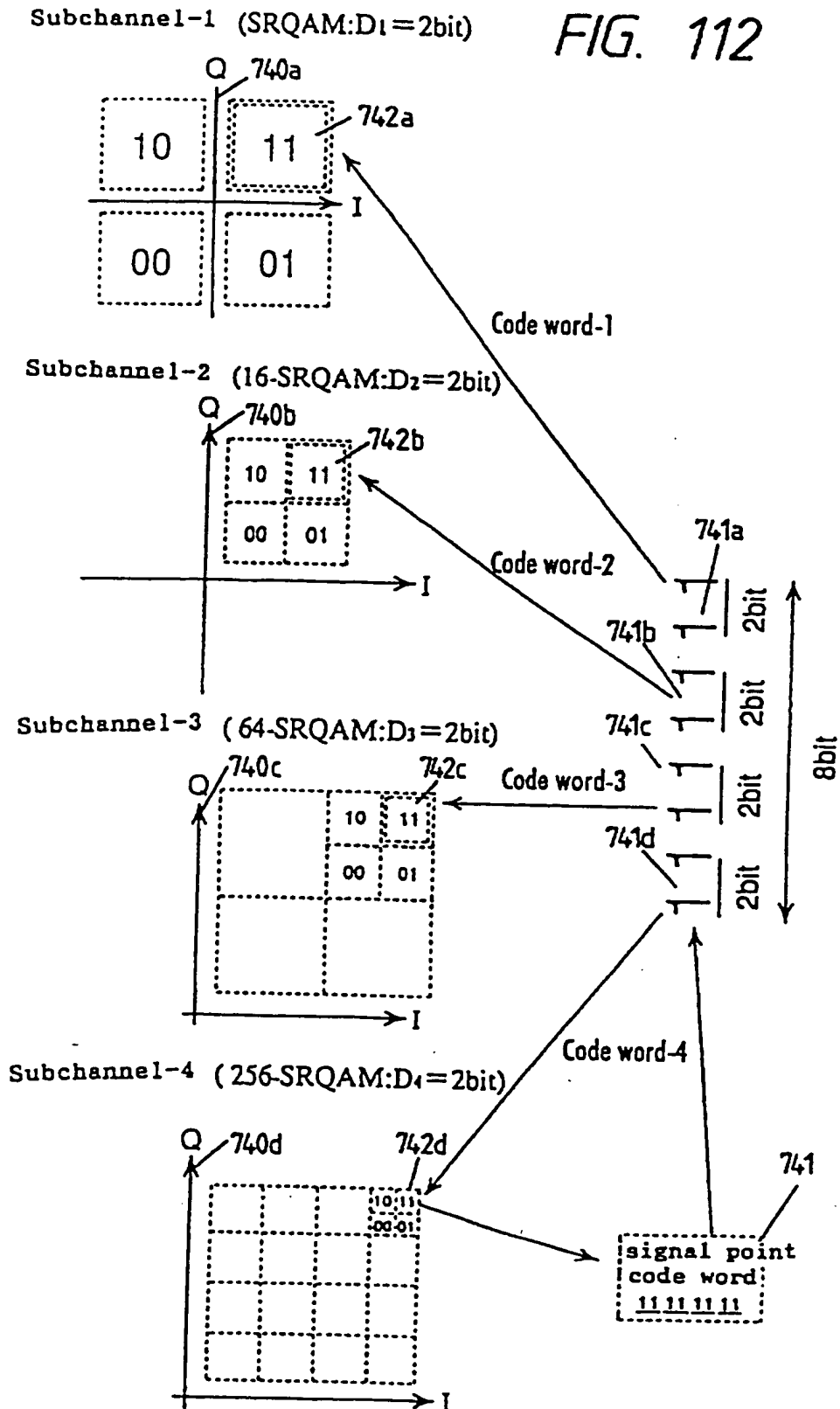


FIG. 111



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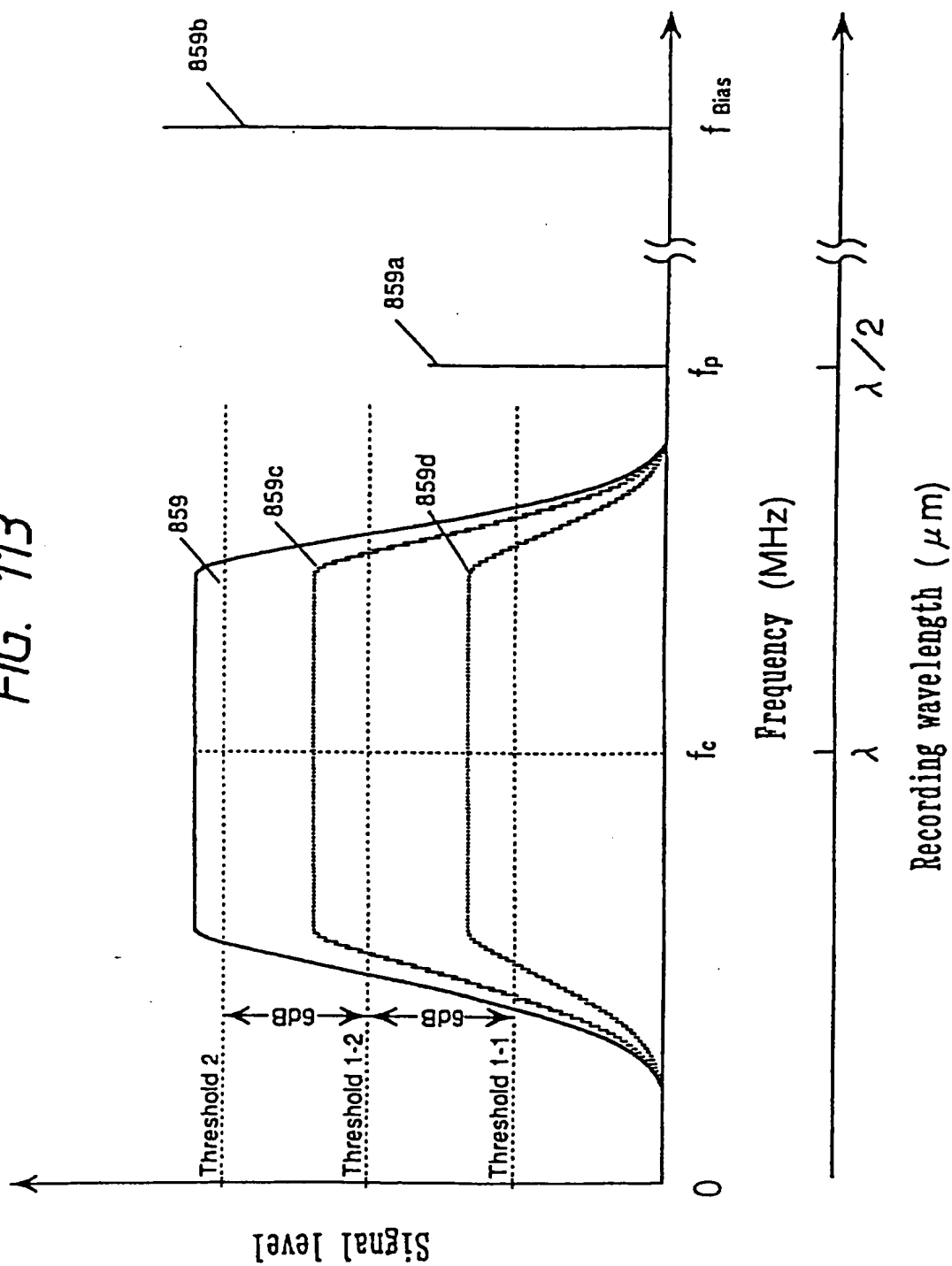
FIG. 112



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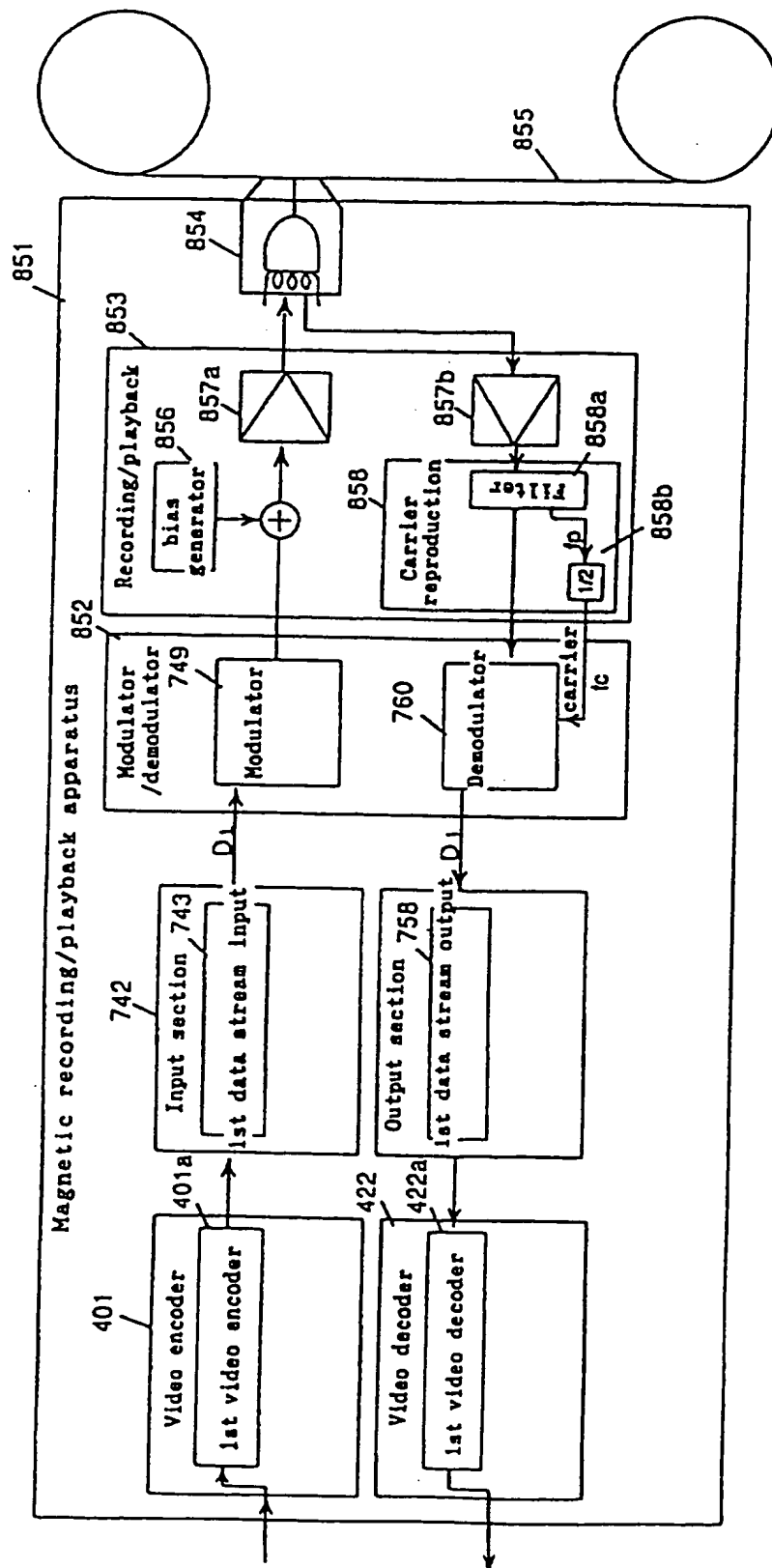


FIG. 113



DocId: 3507260

FIG. 114



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FIG. 115

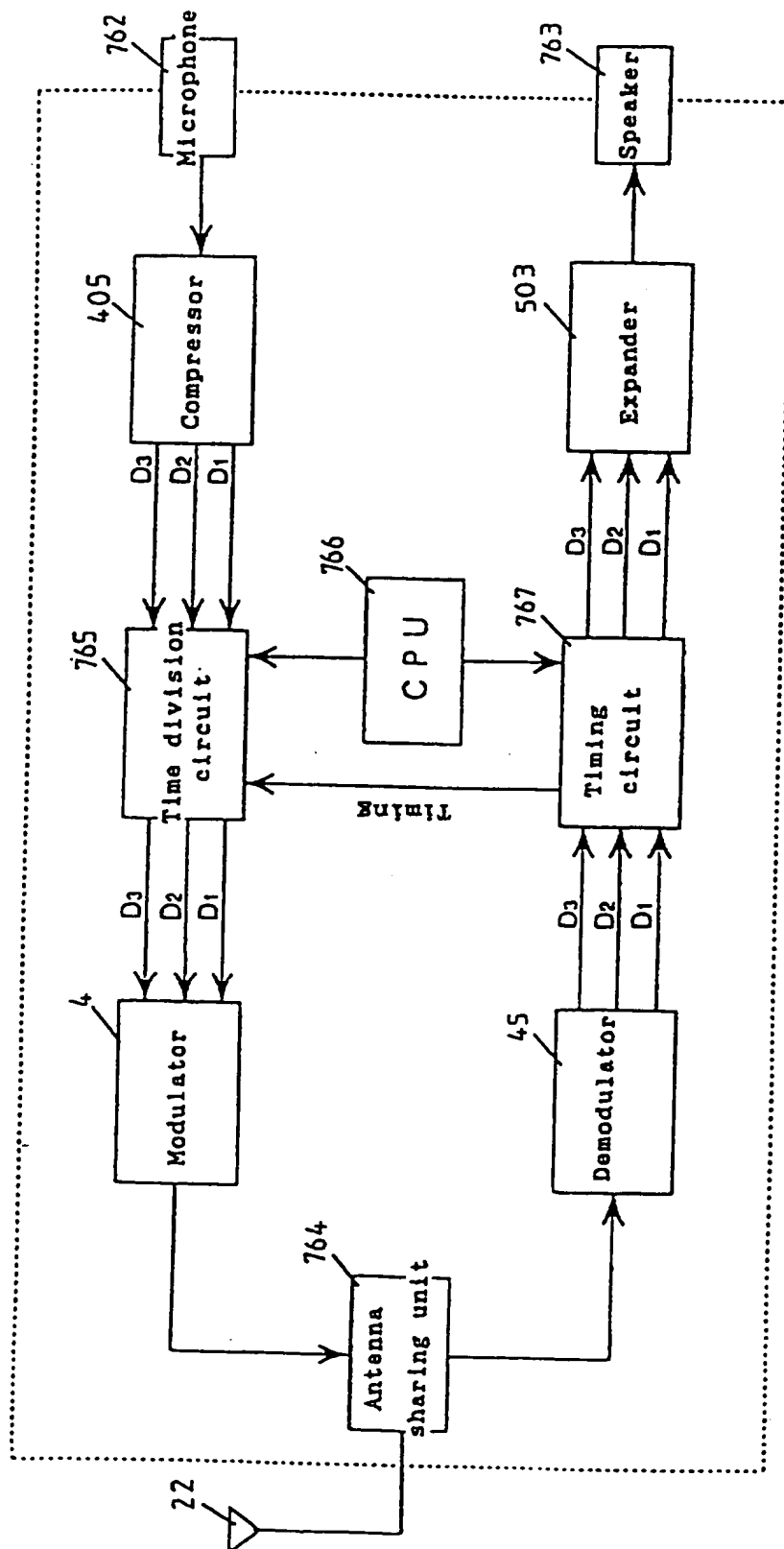
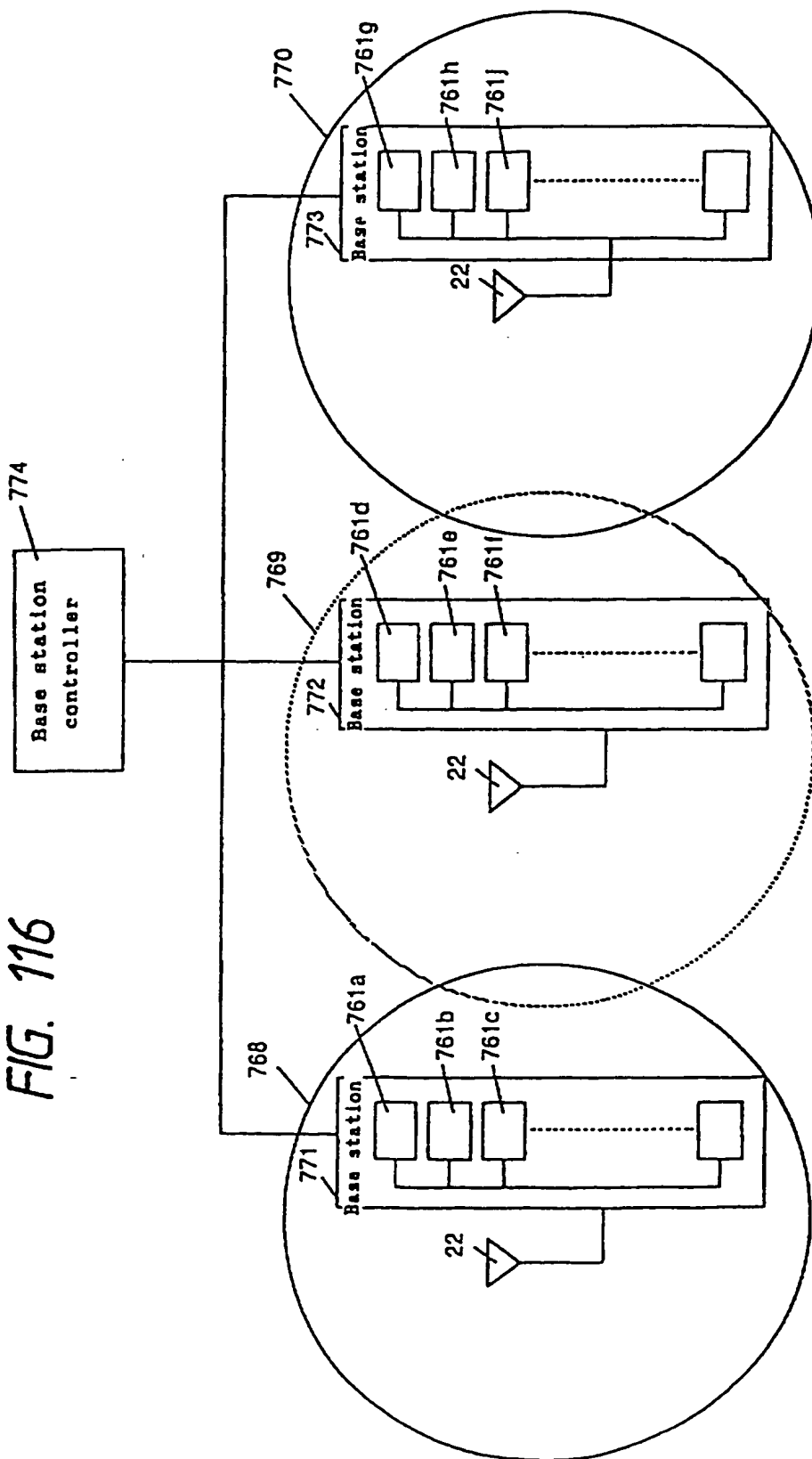


FIG. 116



DocId: 35074260

FIG. 117

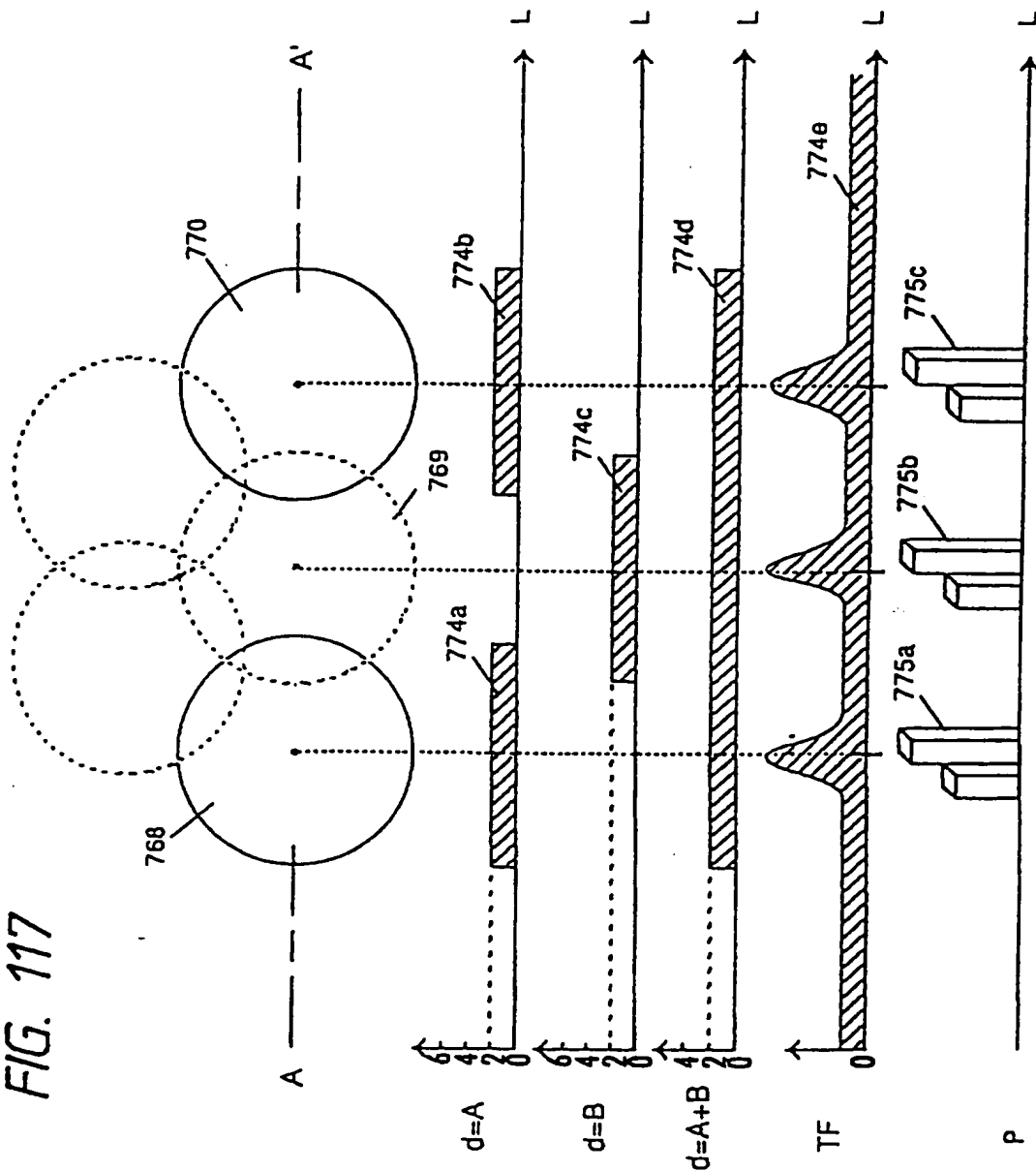


FIG. 118

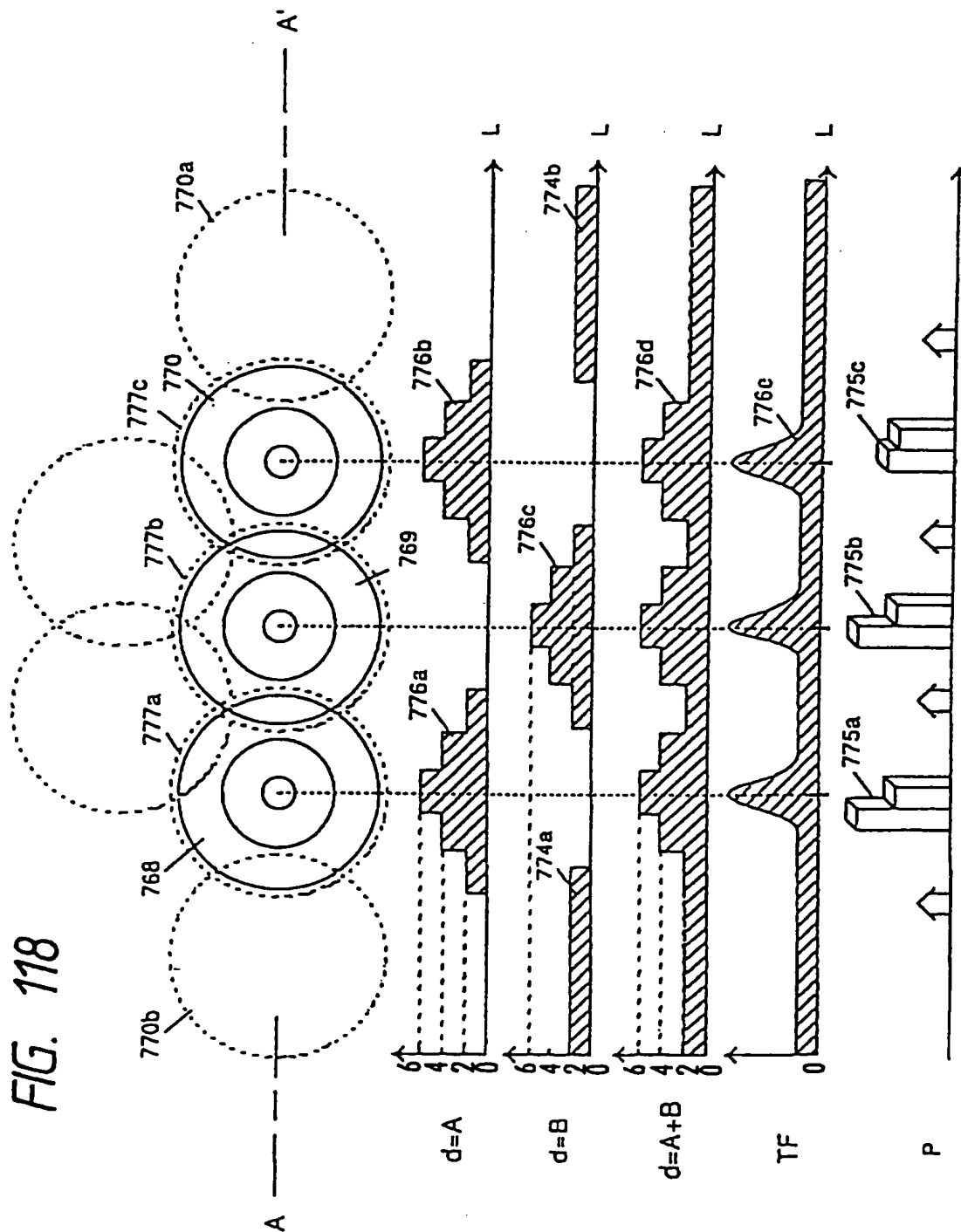


FIG. 119(a)

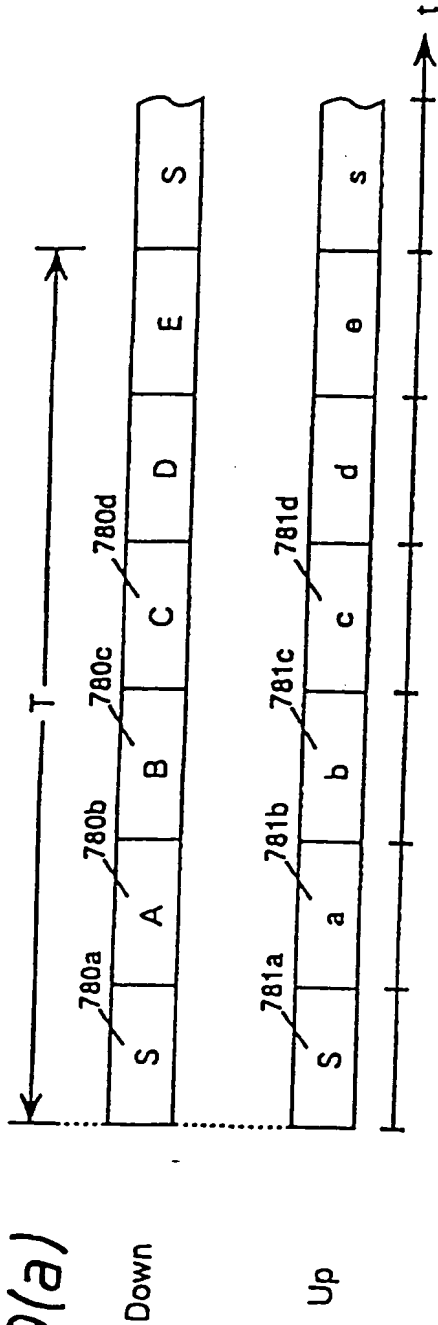


FIG. 119(b)

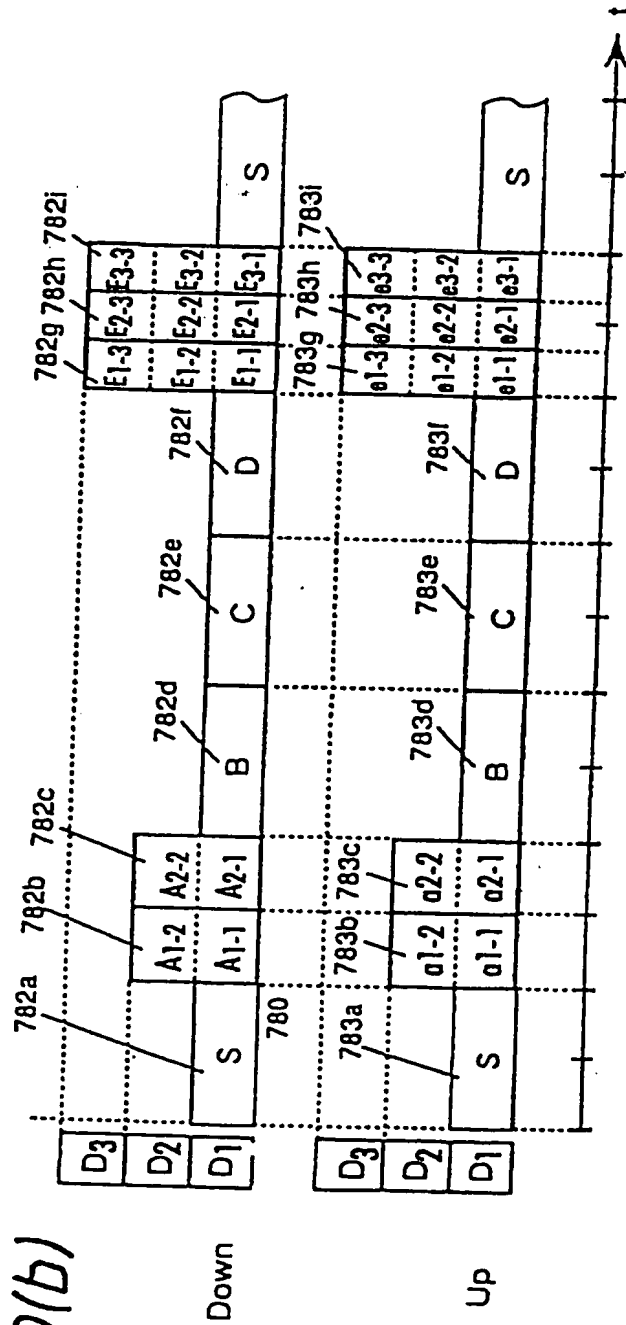


FIG. 120(a)

FIG. 120(a)

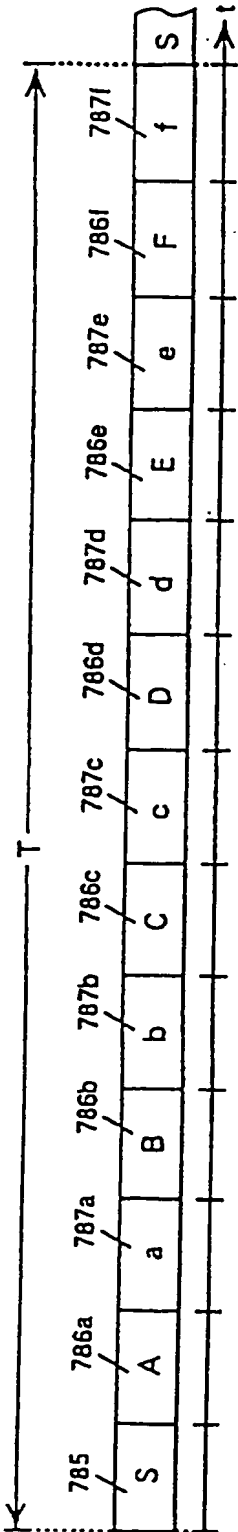
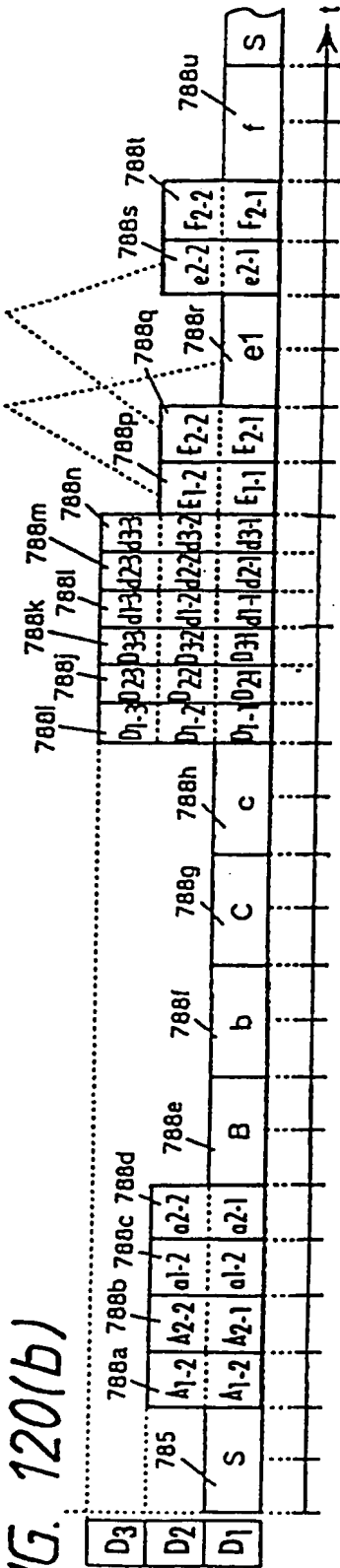


FIG. 120(b)





[illegible]

FIG. 121

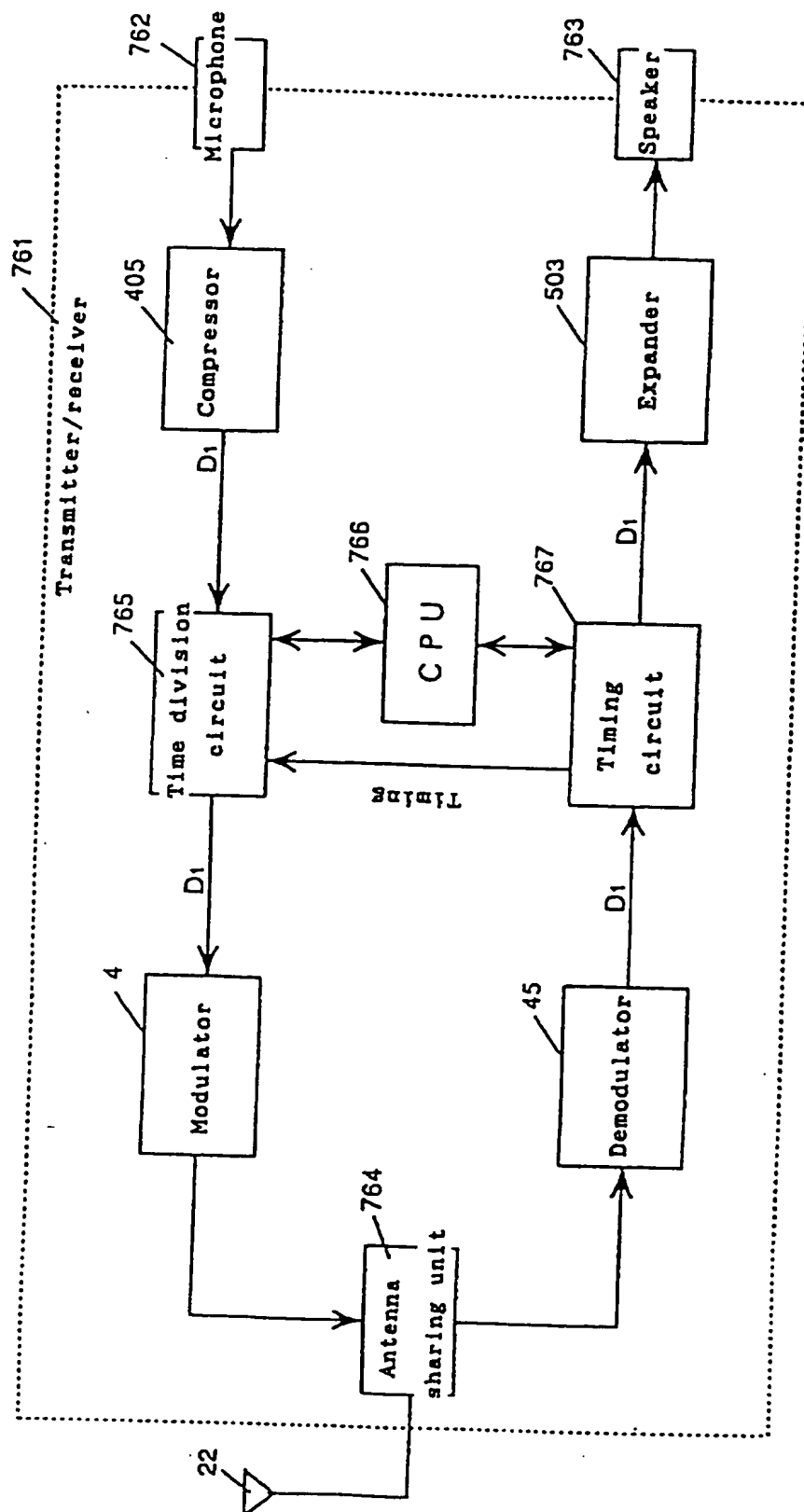


FIG. 122

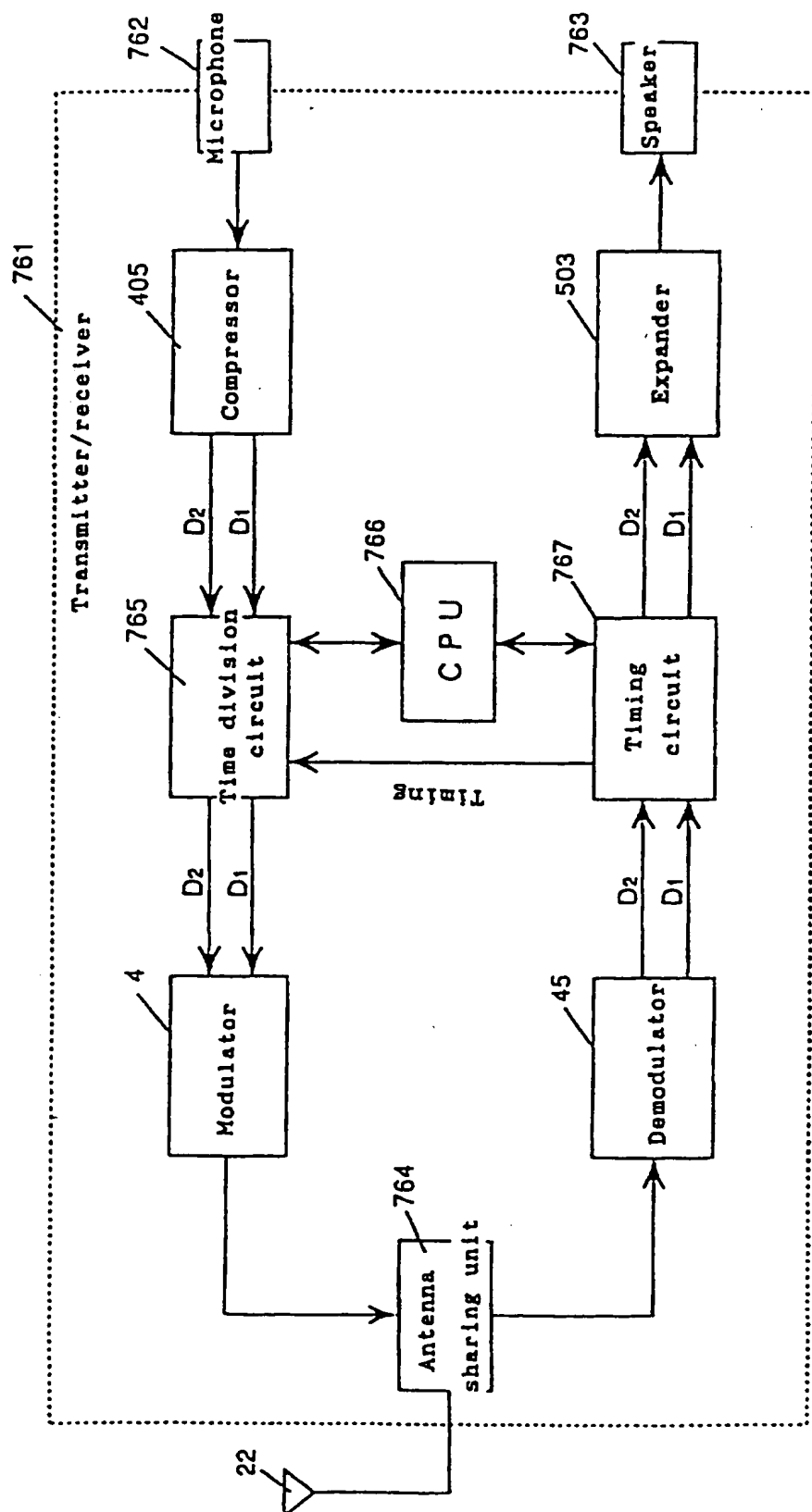
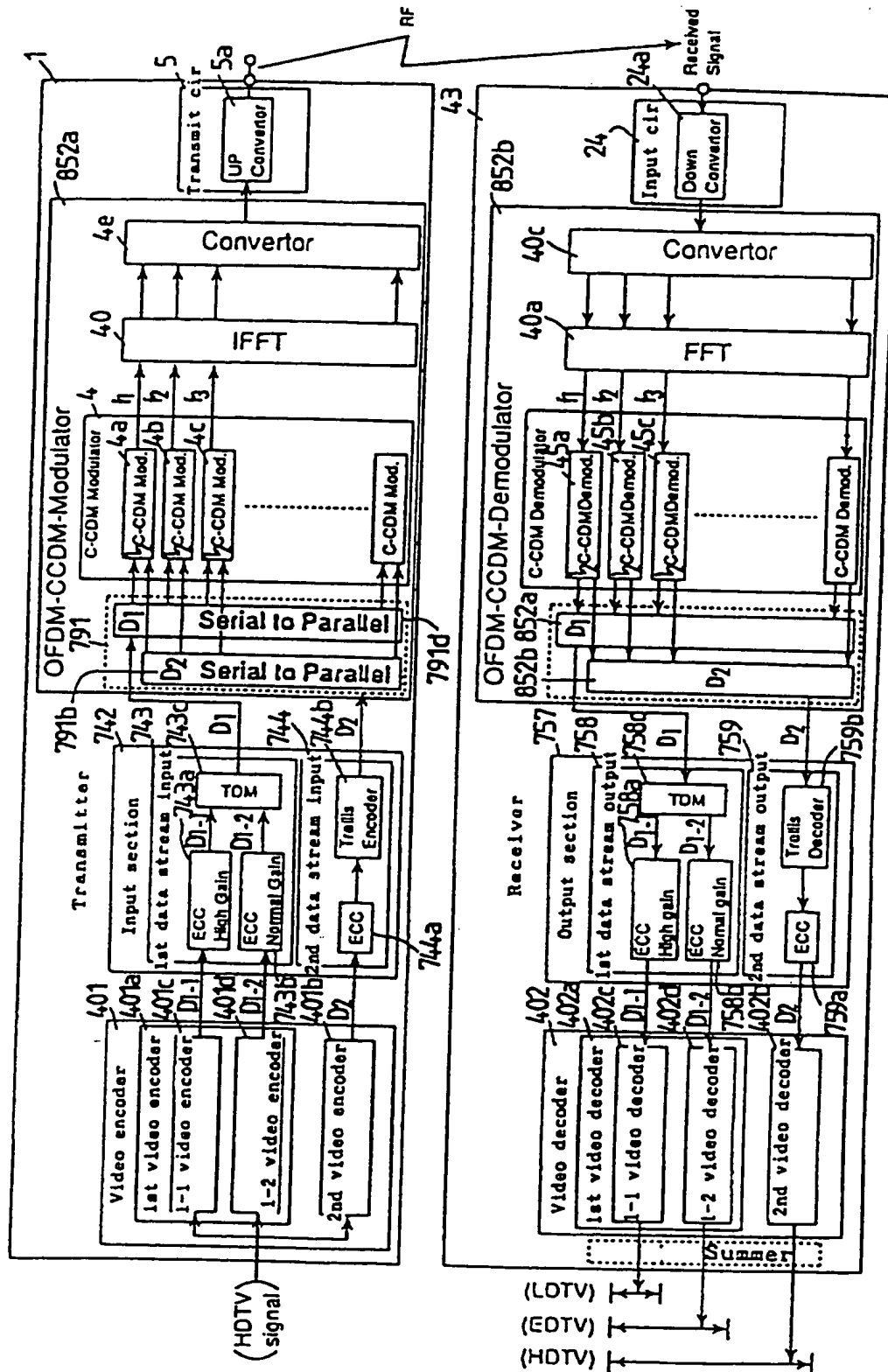
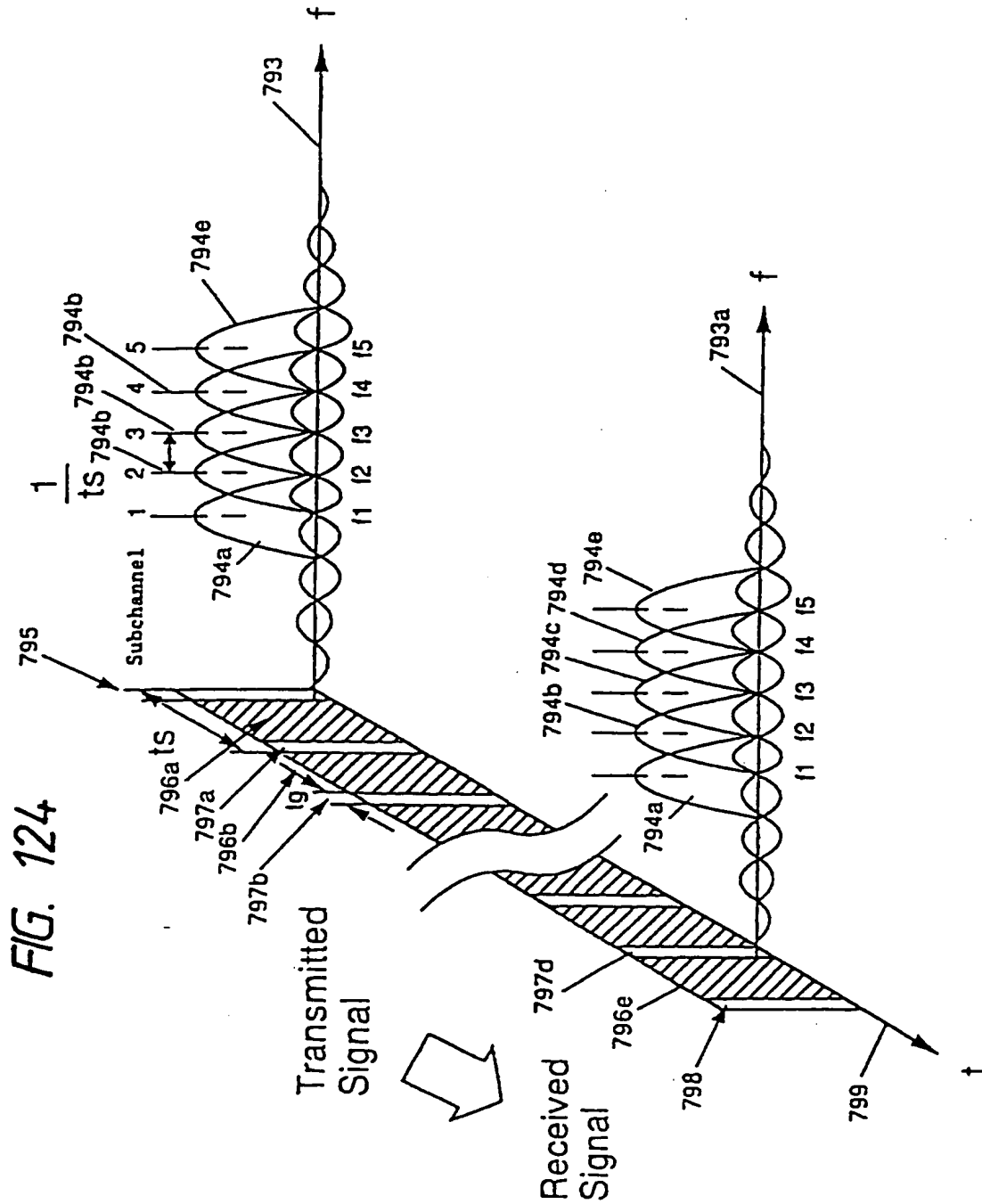


FIG. 123





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FIG. 125(a)

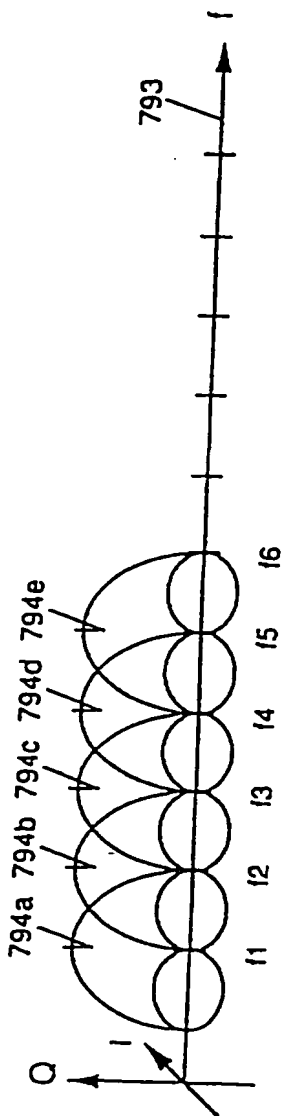
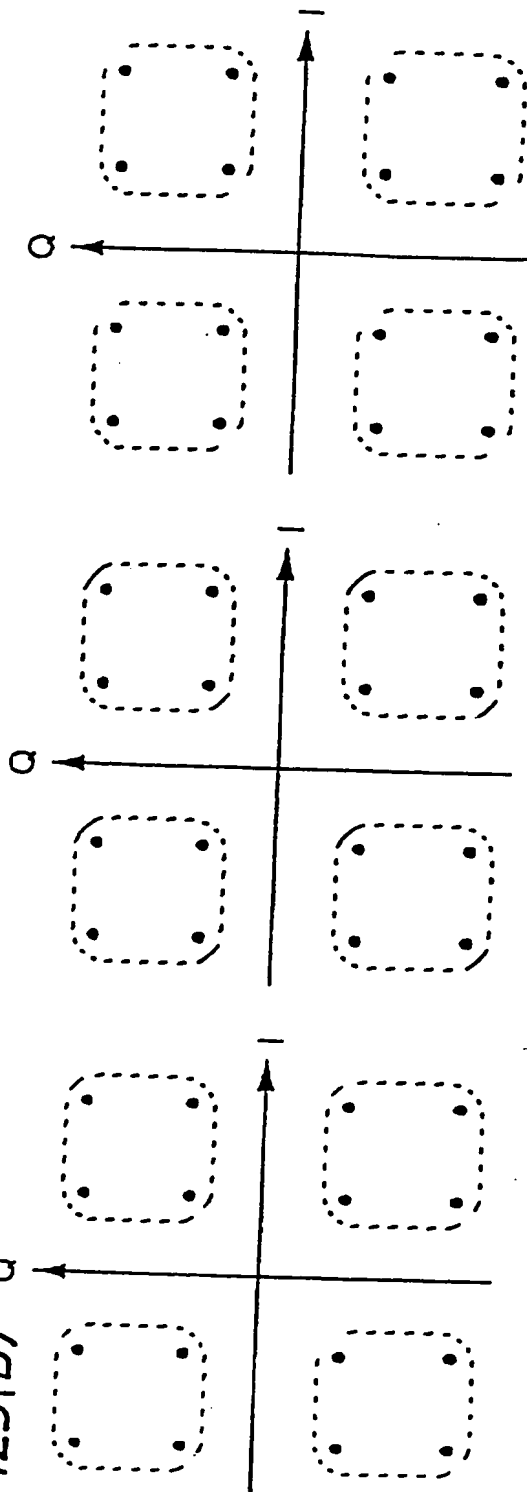
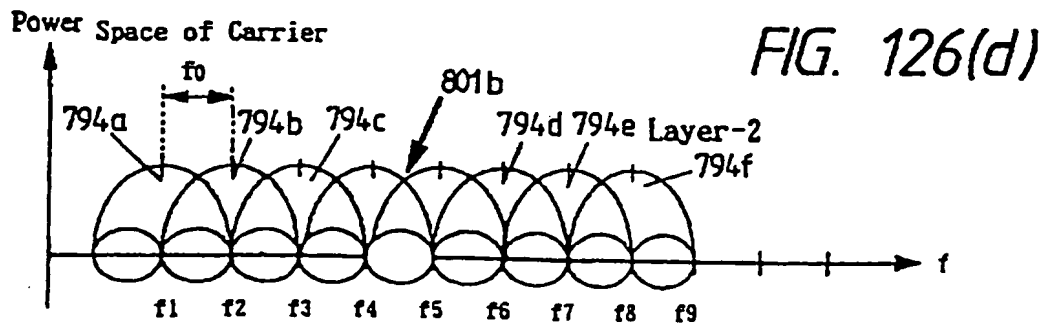
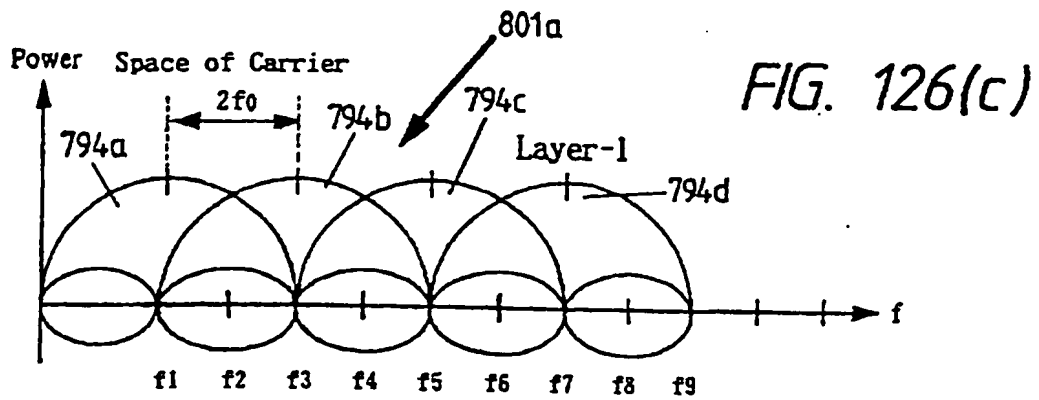
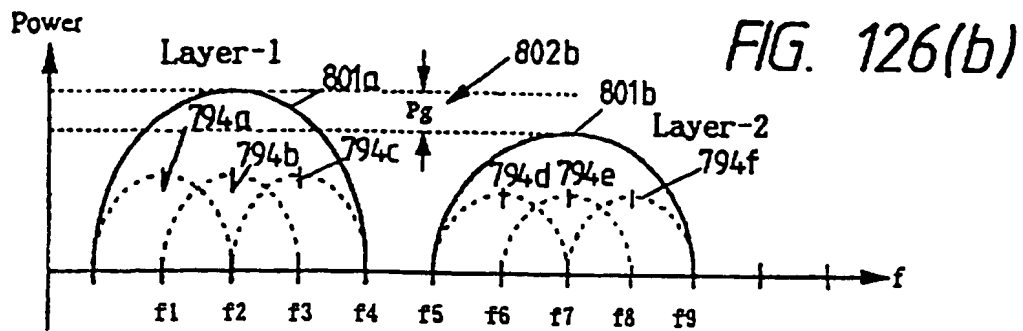
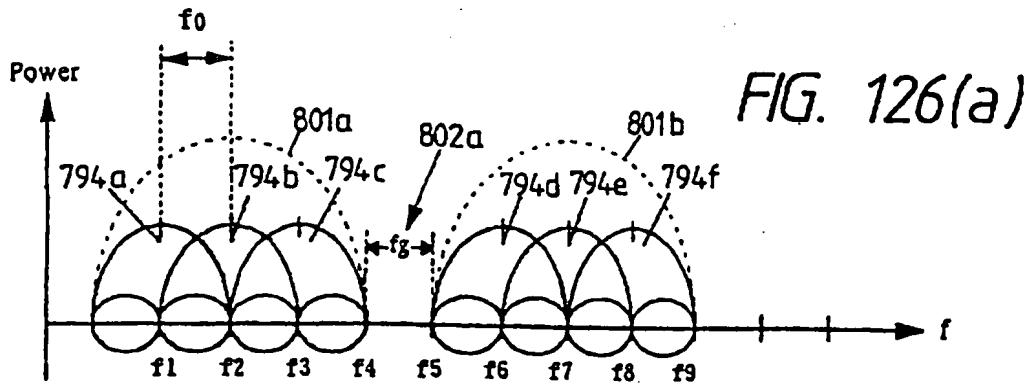


FIG. 125(b)





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FIG. 127

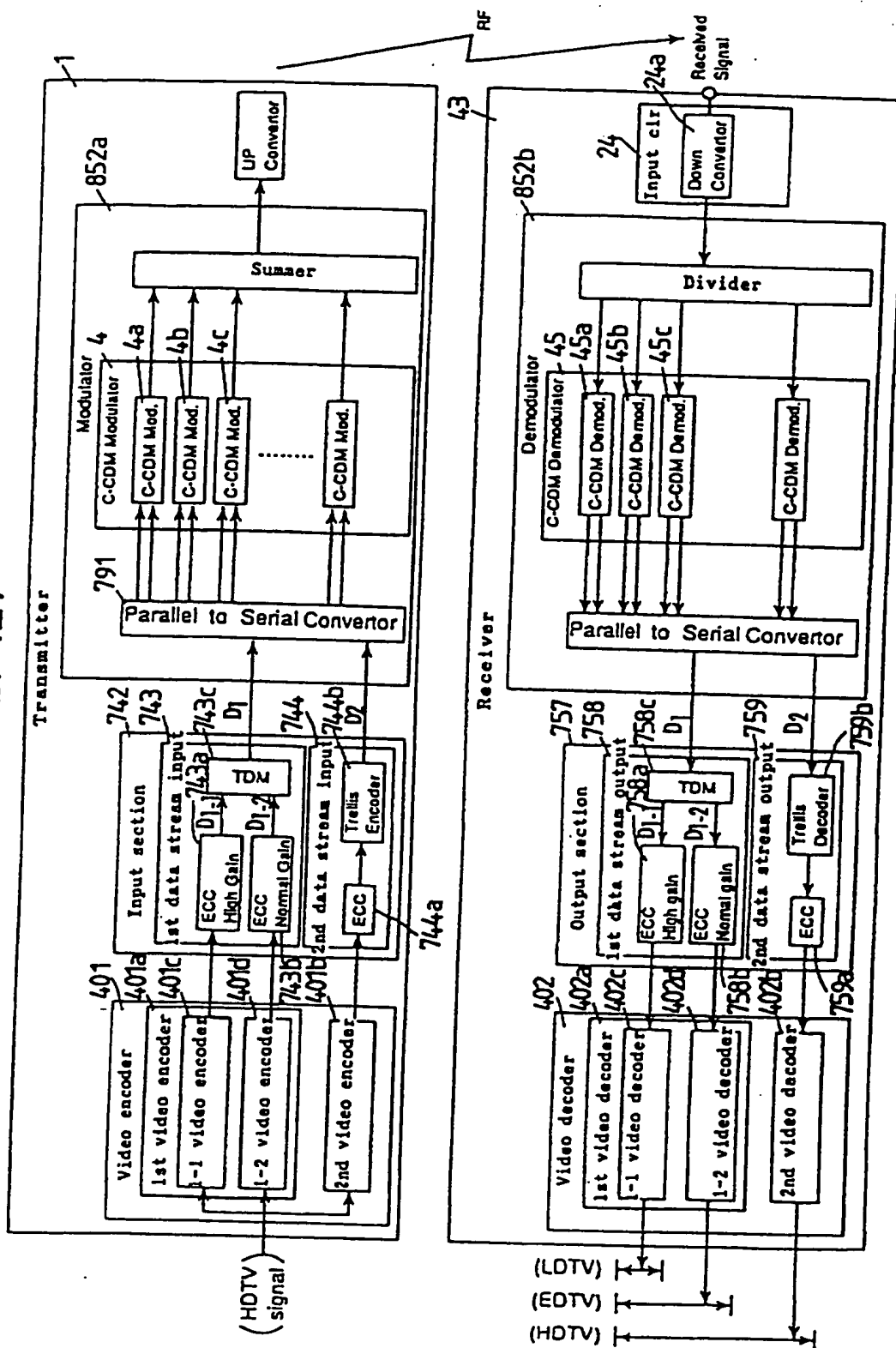


FIG. 128(a)

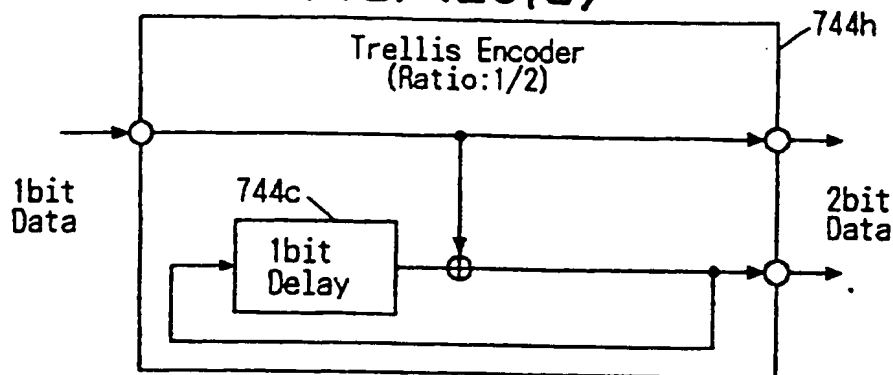


FIG. 128(b)

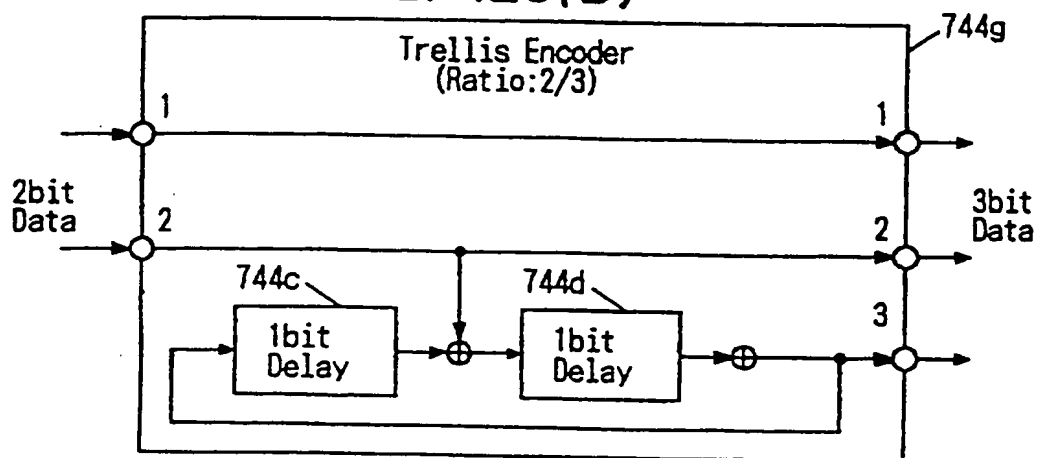


FIG. 128(c)

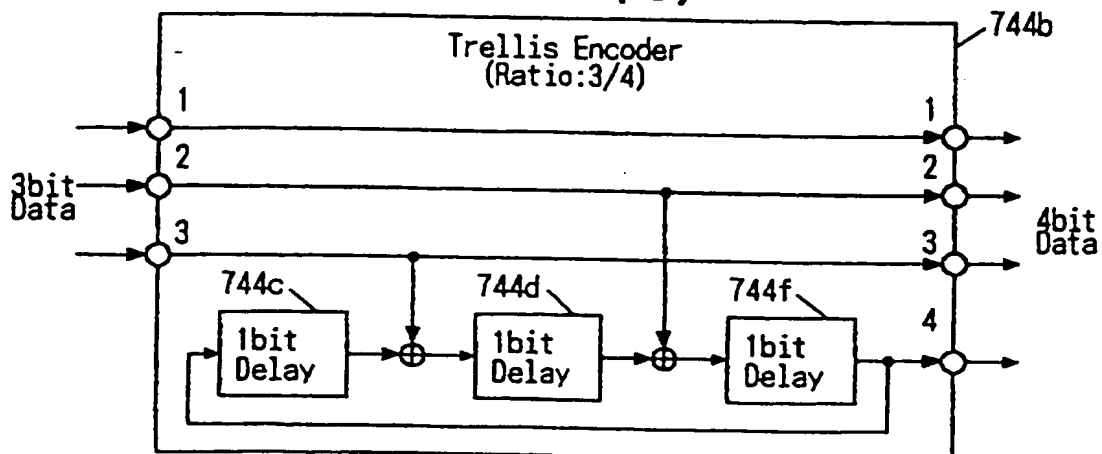




FIG. 128(d)

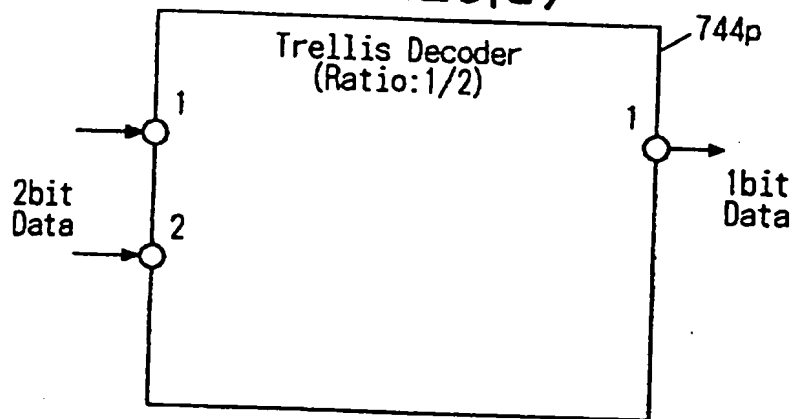


FIG. 128(e)

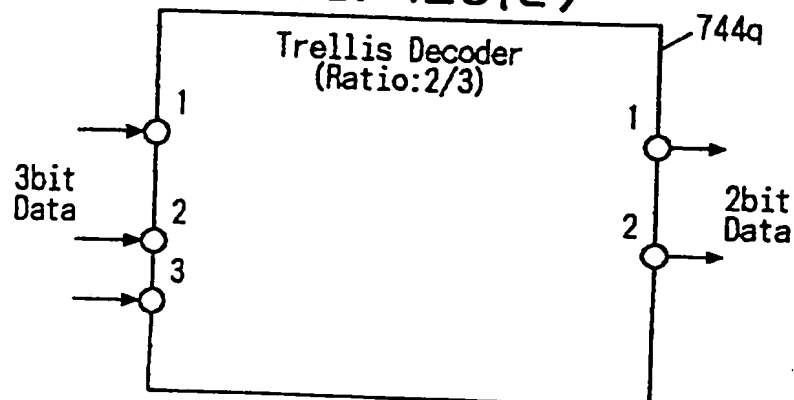
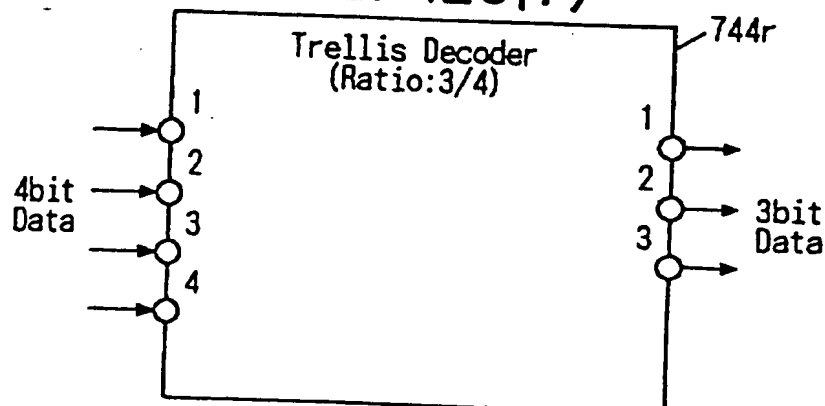
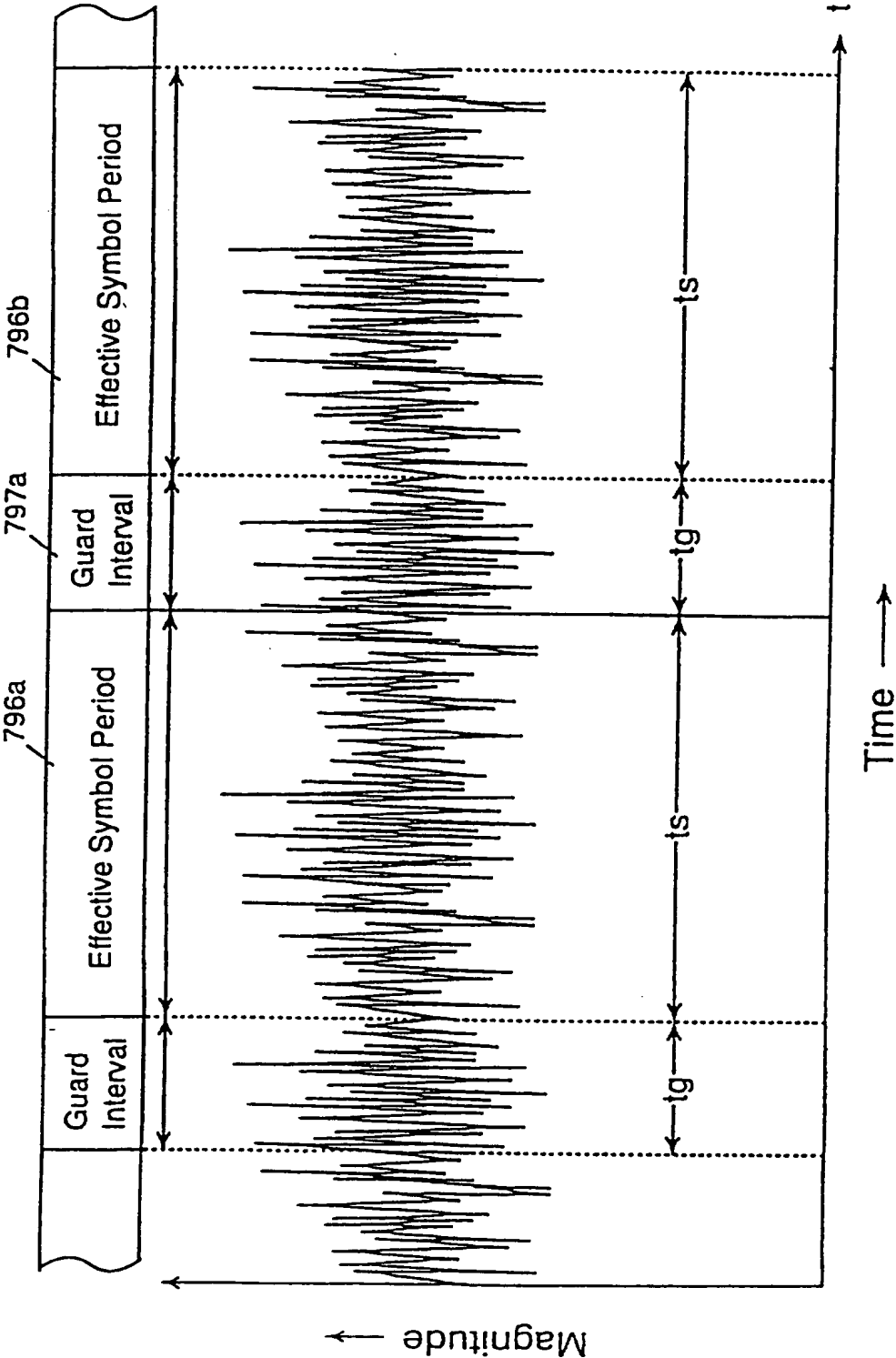


FIG. 128(f)



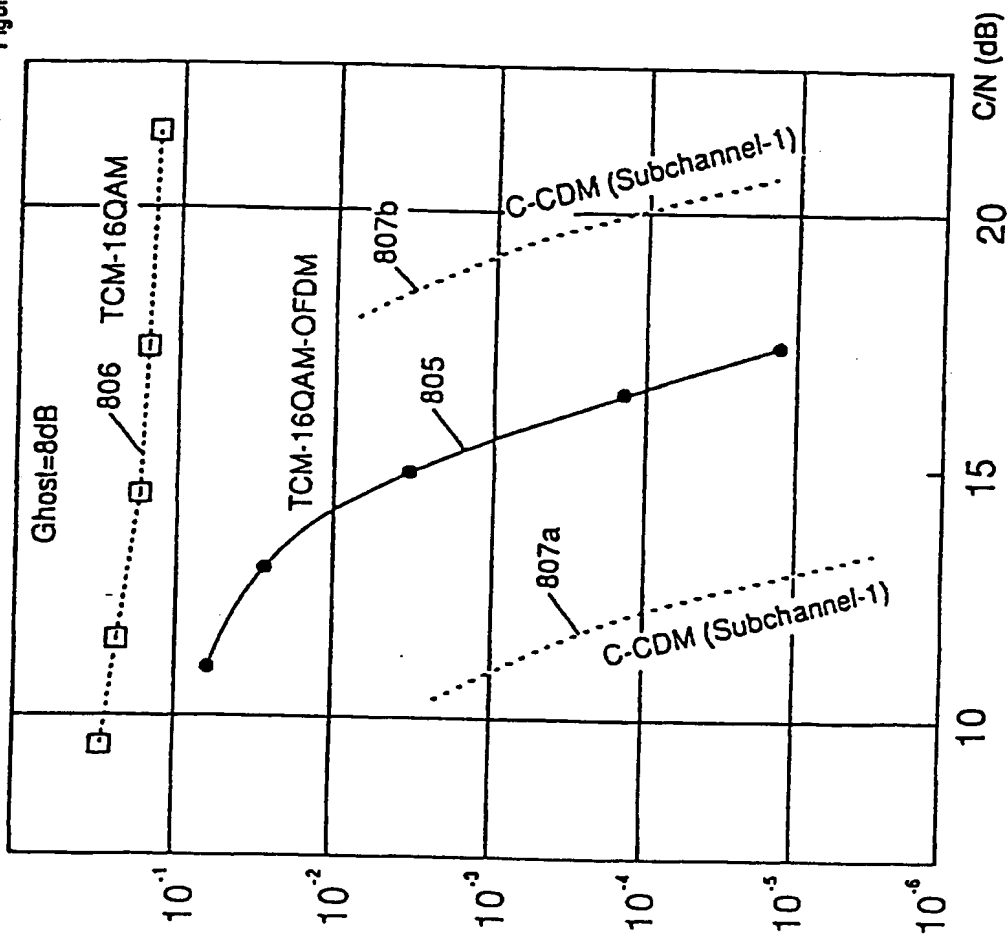
000227 890044260

FIG. 129



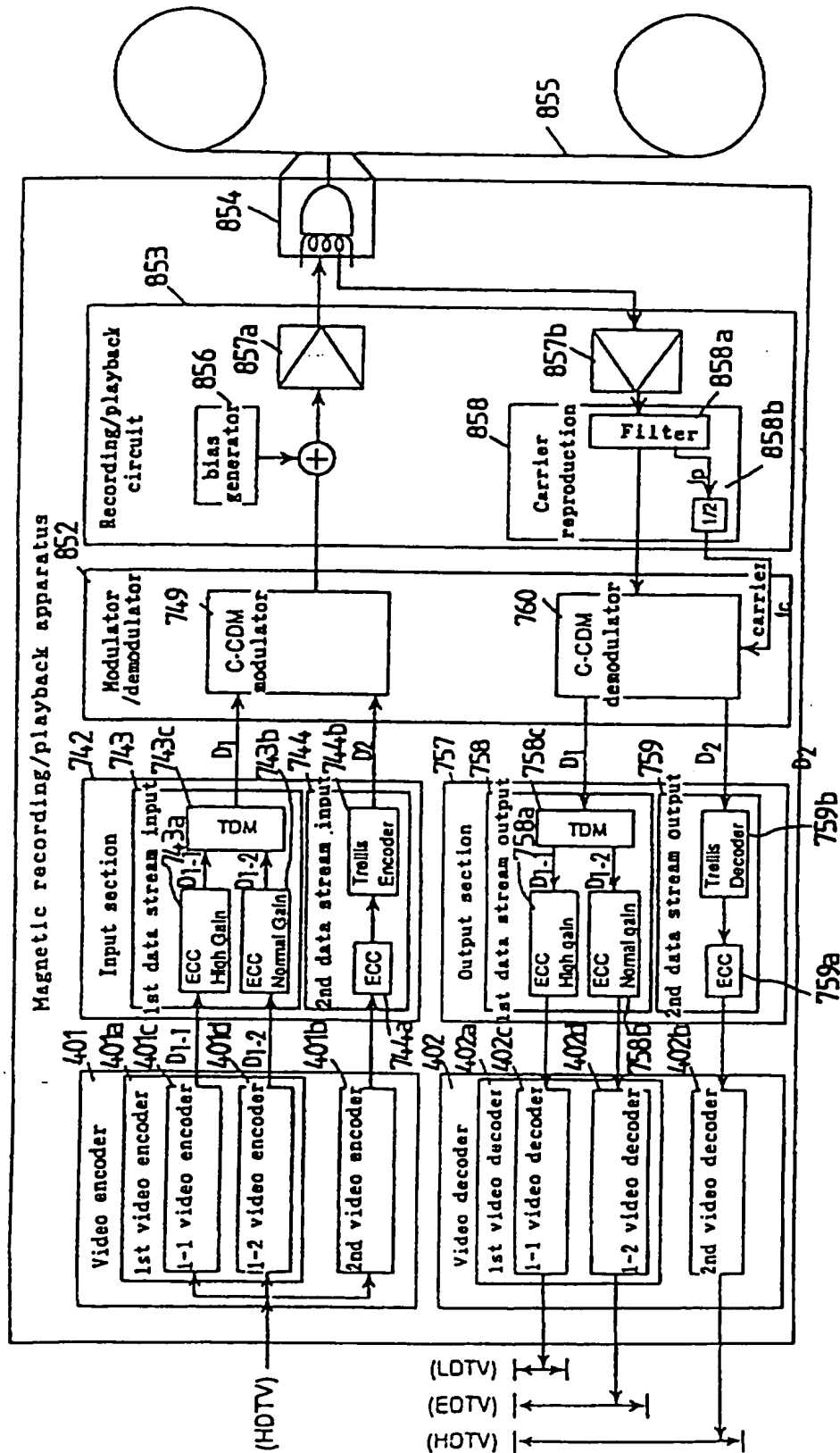
GHOST DELAY=2 $\mu$ s. O/U=8dB  
Figure 8 Bit Error Rate Performance Under Single Ghost  
and Gaussian Noise (1)

FIG. 130



000007-89004250

FIG. 131



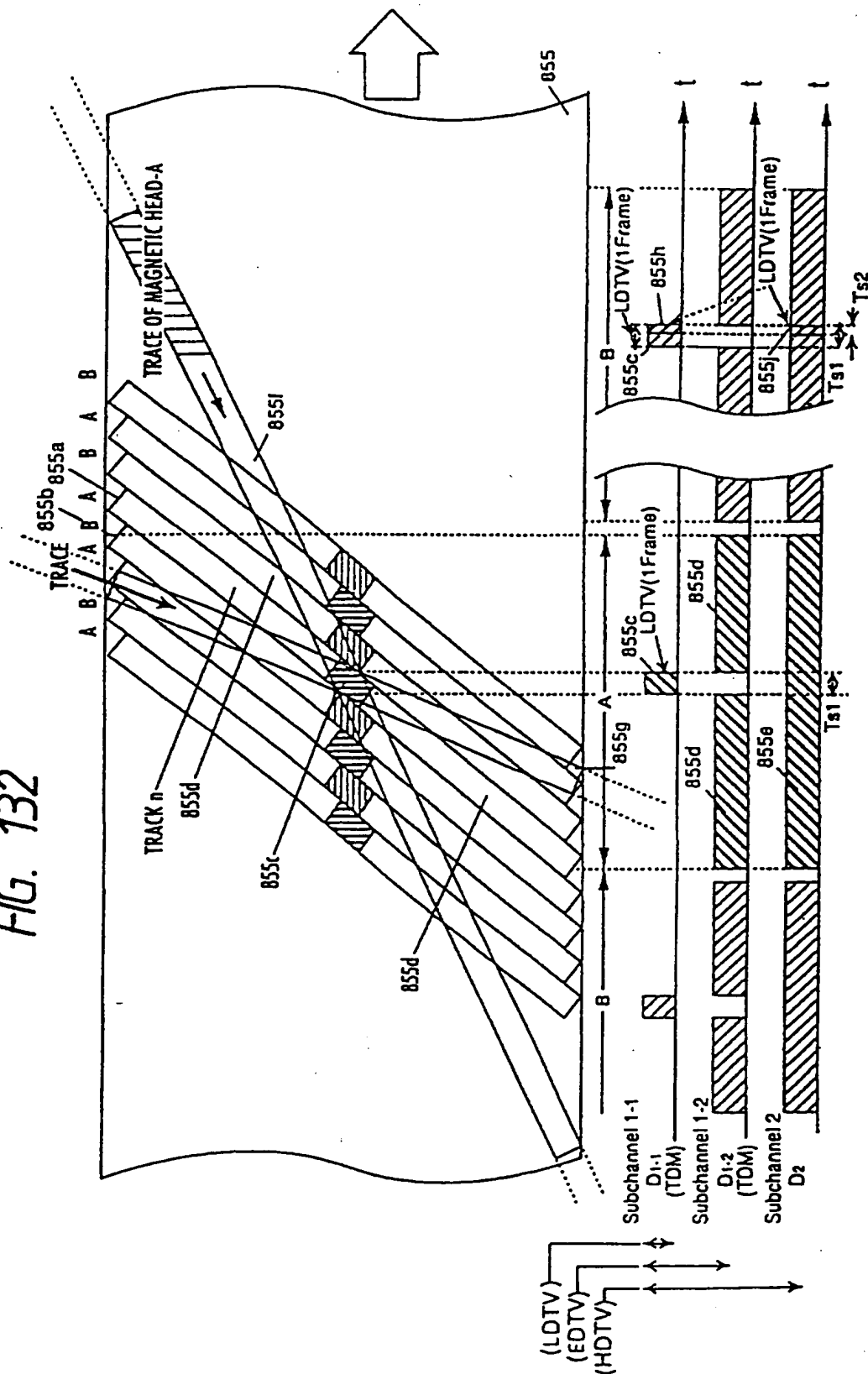


FIG. 133

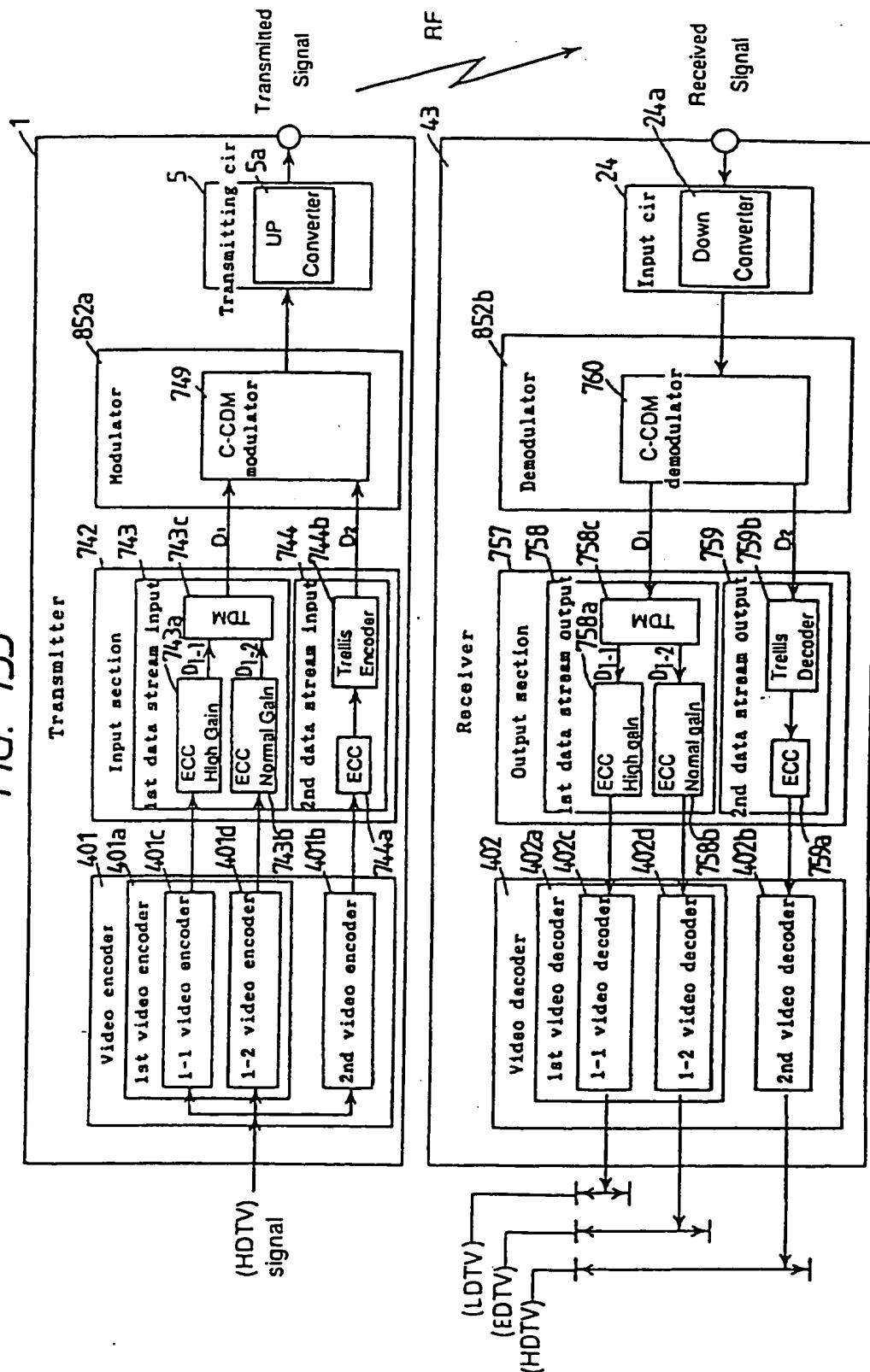


FIG. 134

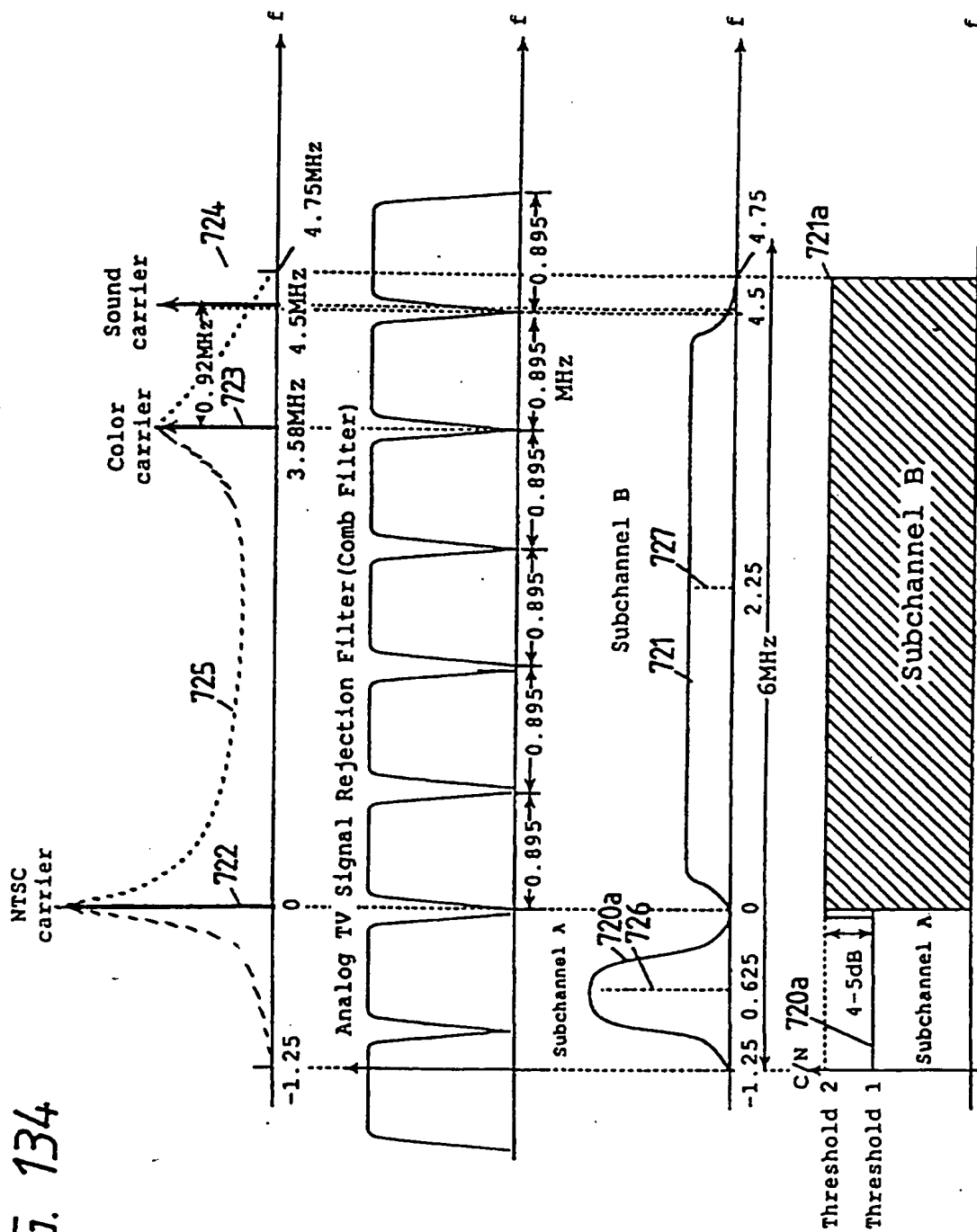


FIG. 135

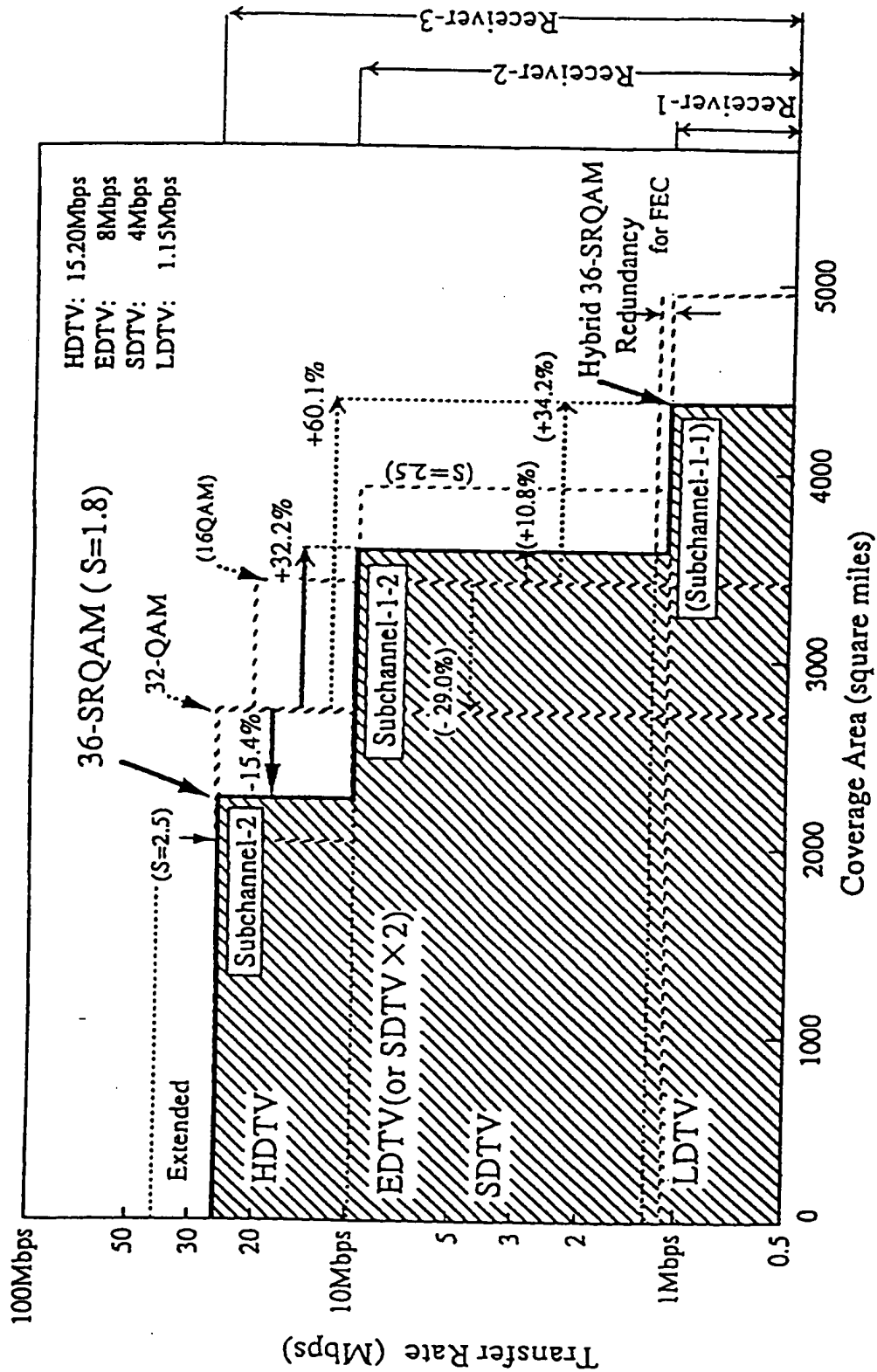
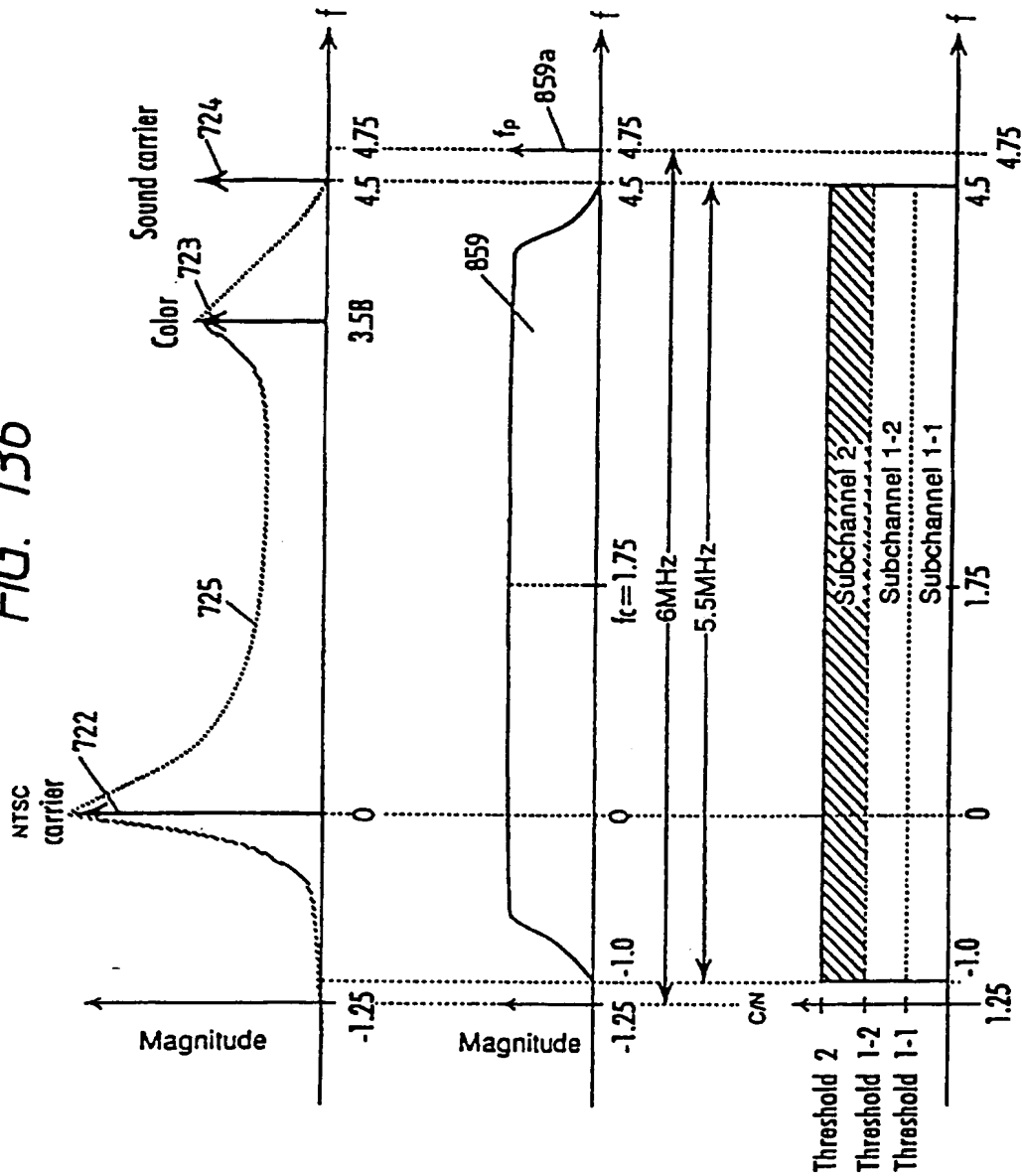




FIG. 136



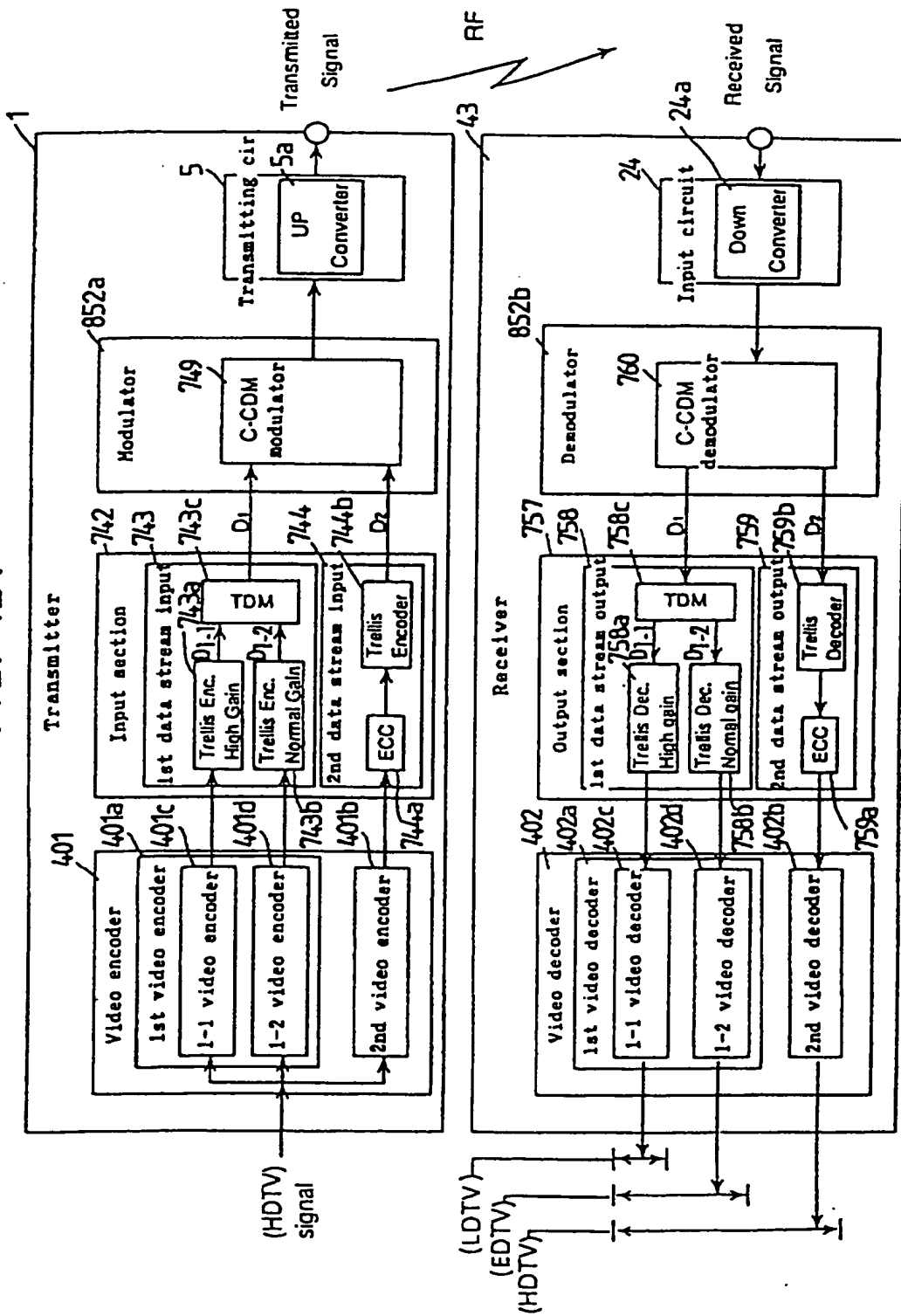
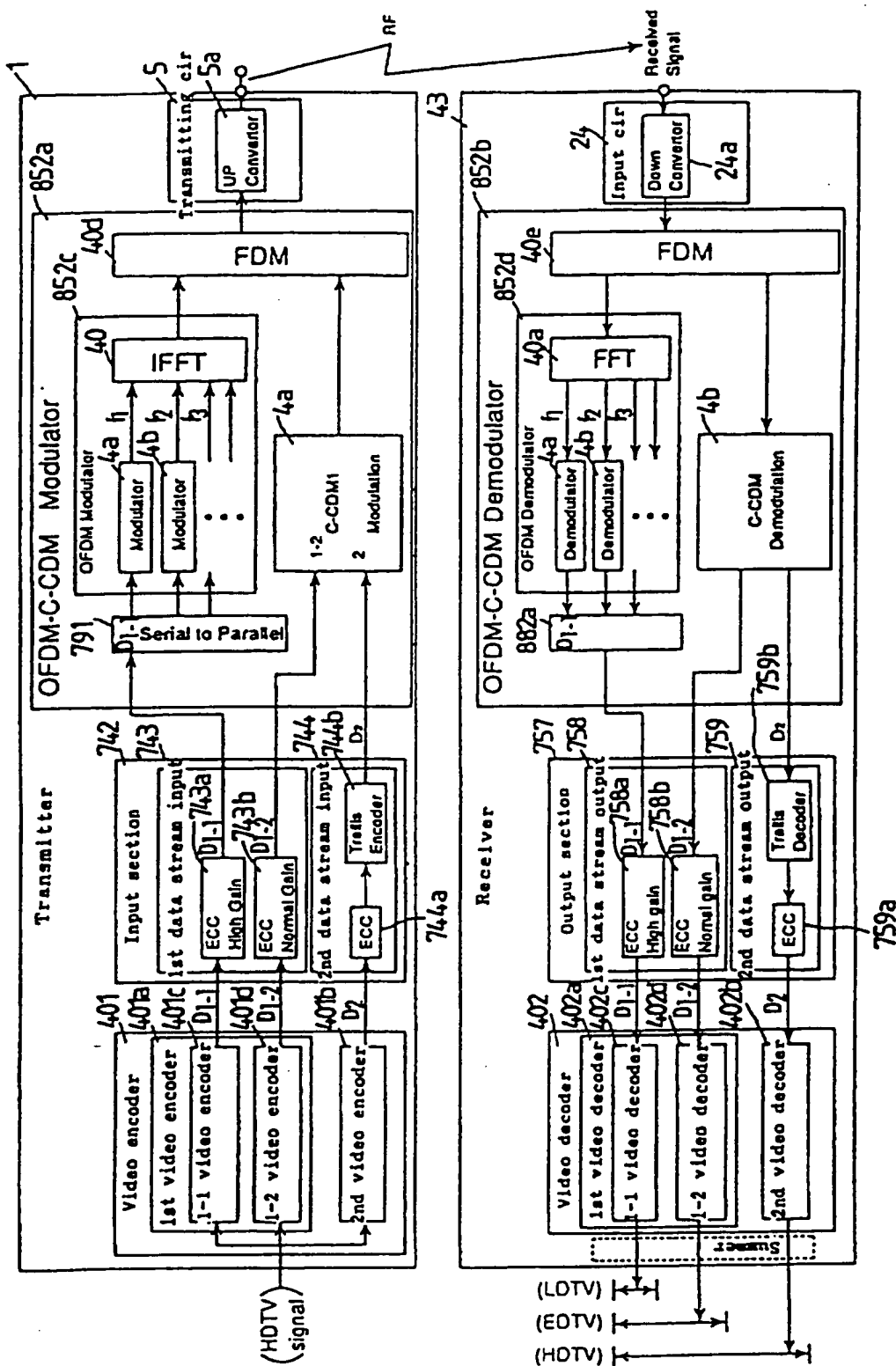


FIG. 138



0 1 2 3 4 5 6 7 8 9  
 10 11 12 13 14 15 16 17 18 19  
 20 21 22 23 24 25 26 27 28 29  
 30 31 32 33 34 35 36 37 38 39  
 40 41 42 43 44 45 46 47 48 49  
 50 51 52 53 54 55 56 57 58 59  
 60 61 62 63 64 65 66 67 68 69  
 70 71 72 73 74 75 76 77 78 79  
 80 81 82 83 84 85 86 87 88 89  
 90 91 92 93 94 95 96 97 98 99

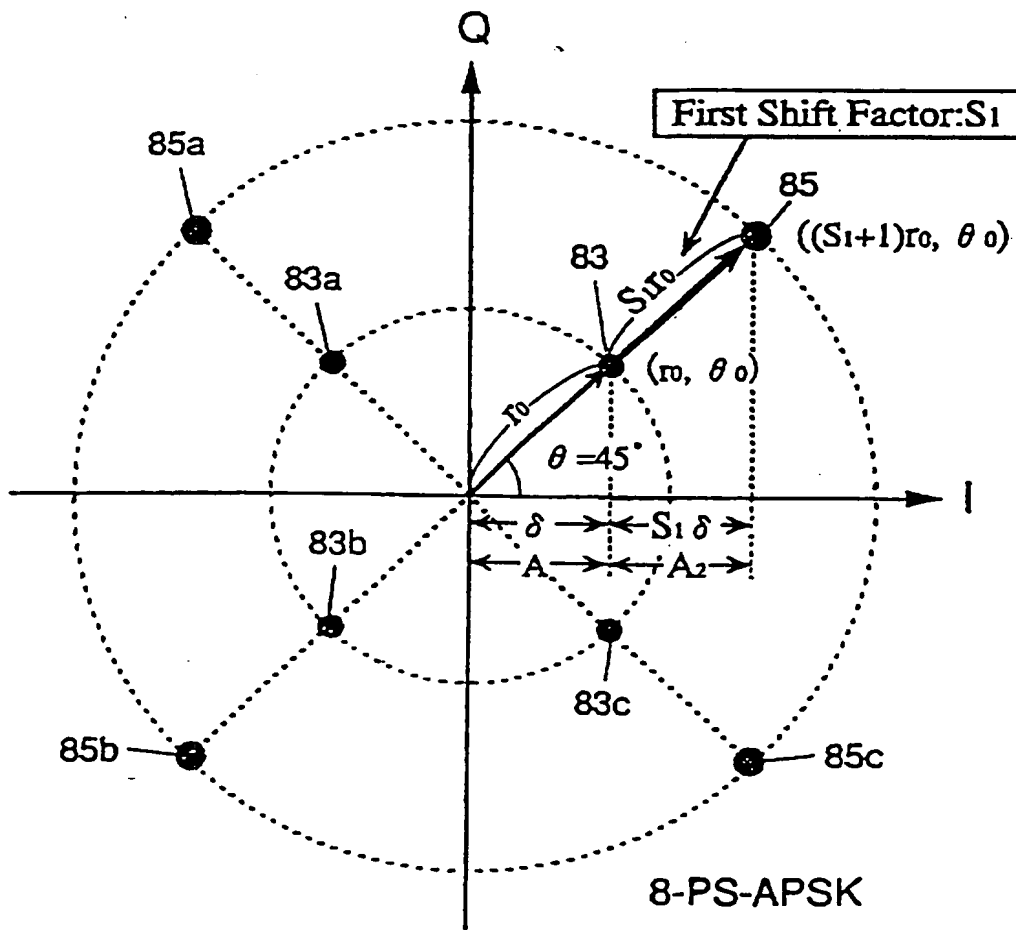


FIG. 140

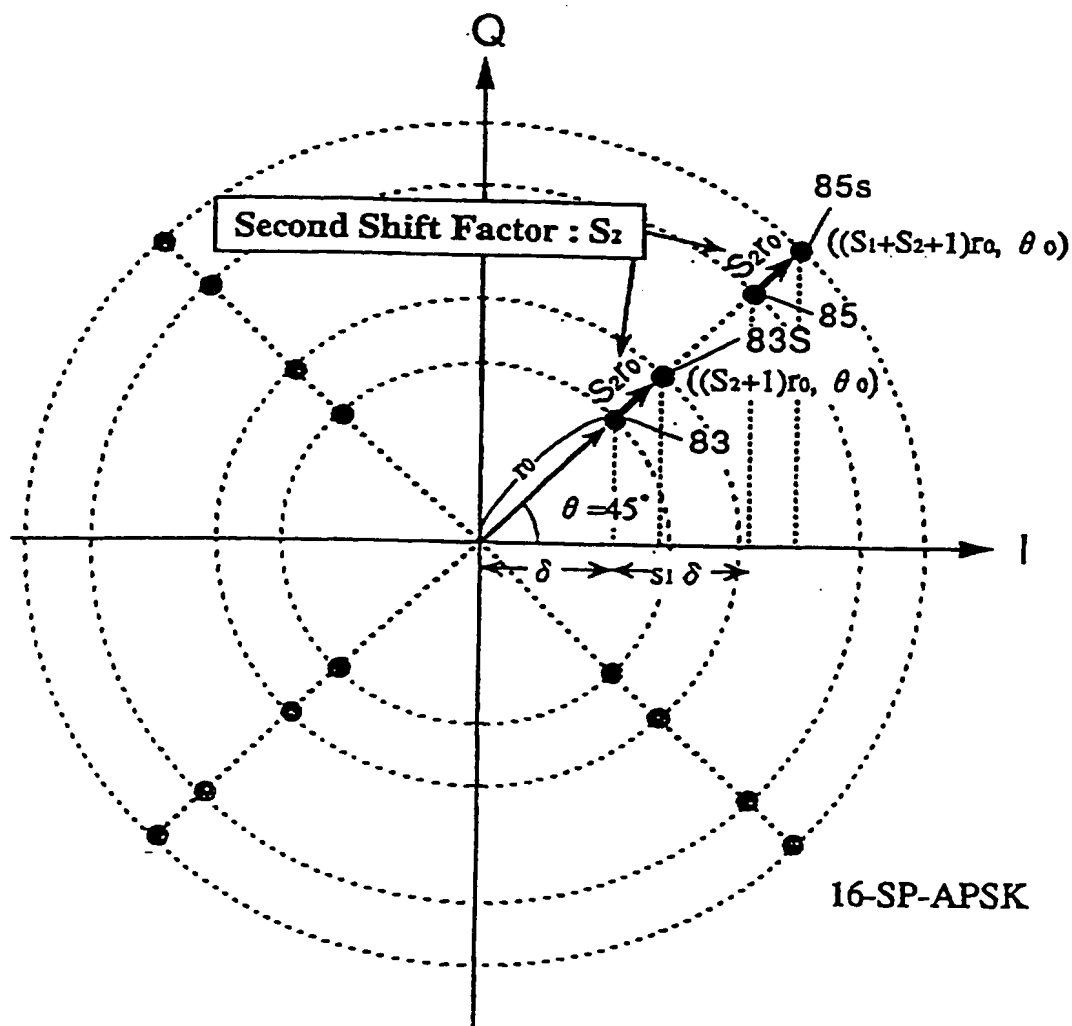


FIG. 140

FIG. 141

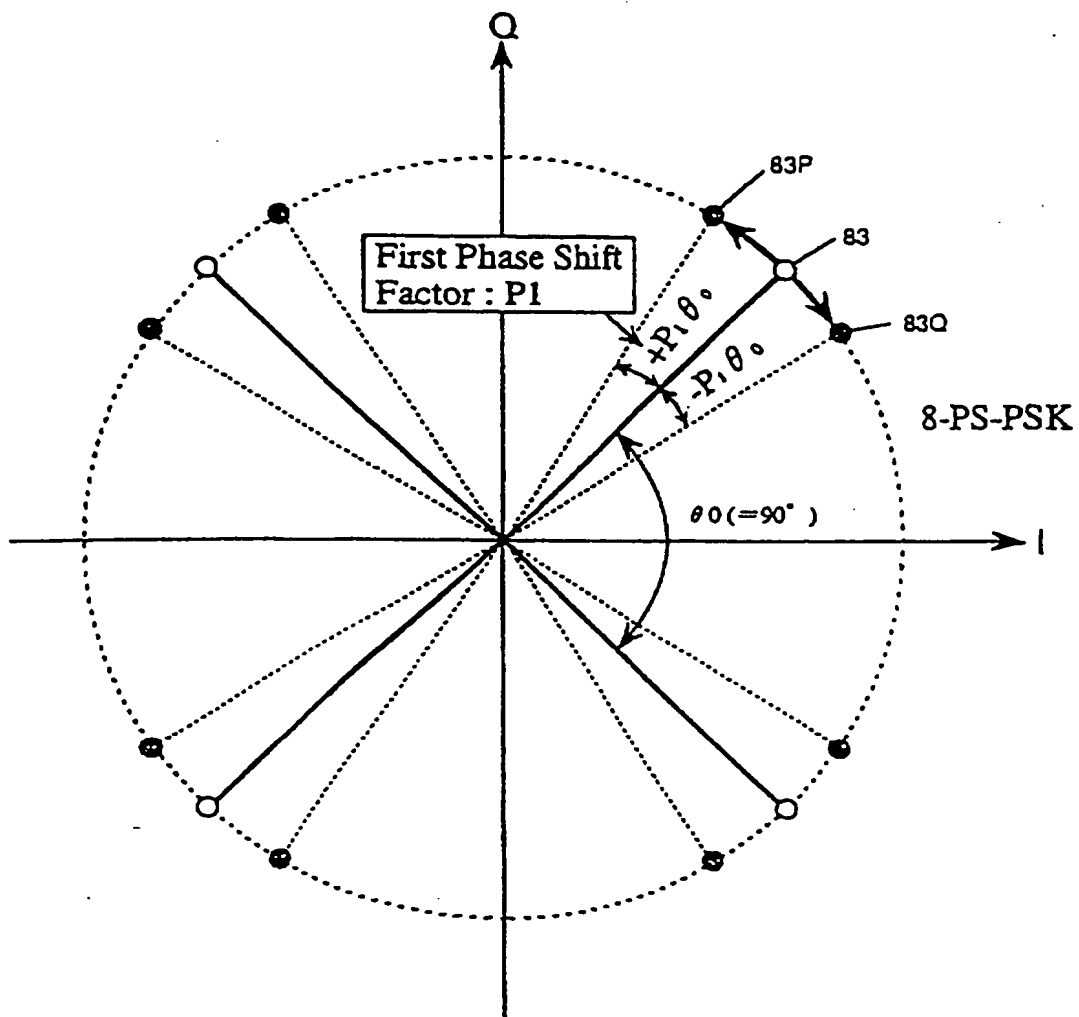
[illegible]



FIG. 143

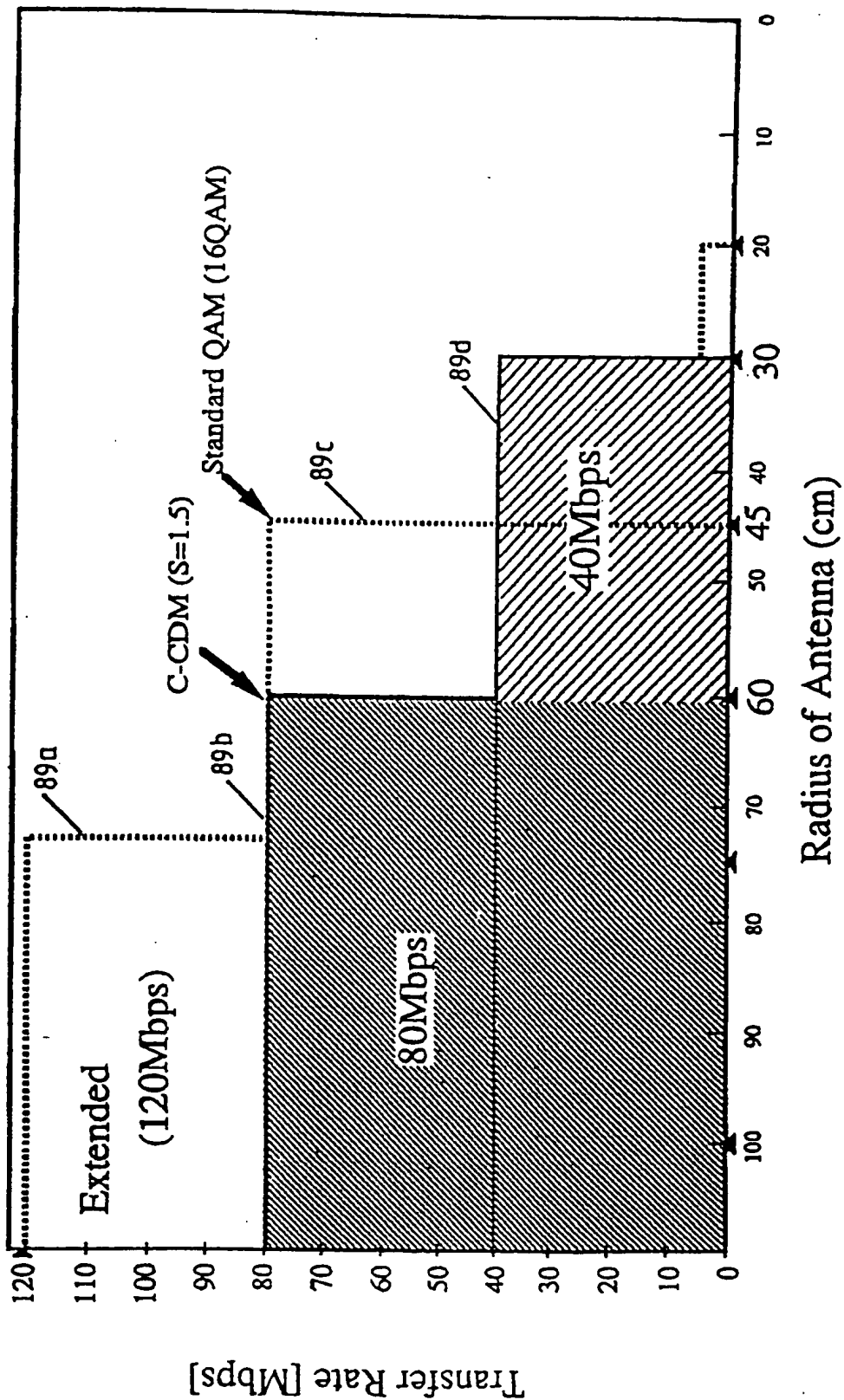




FIG. 144

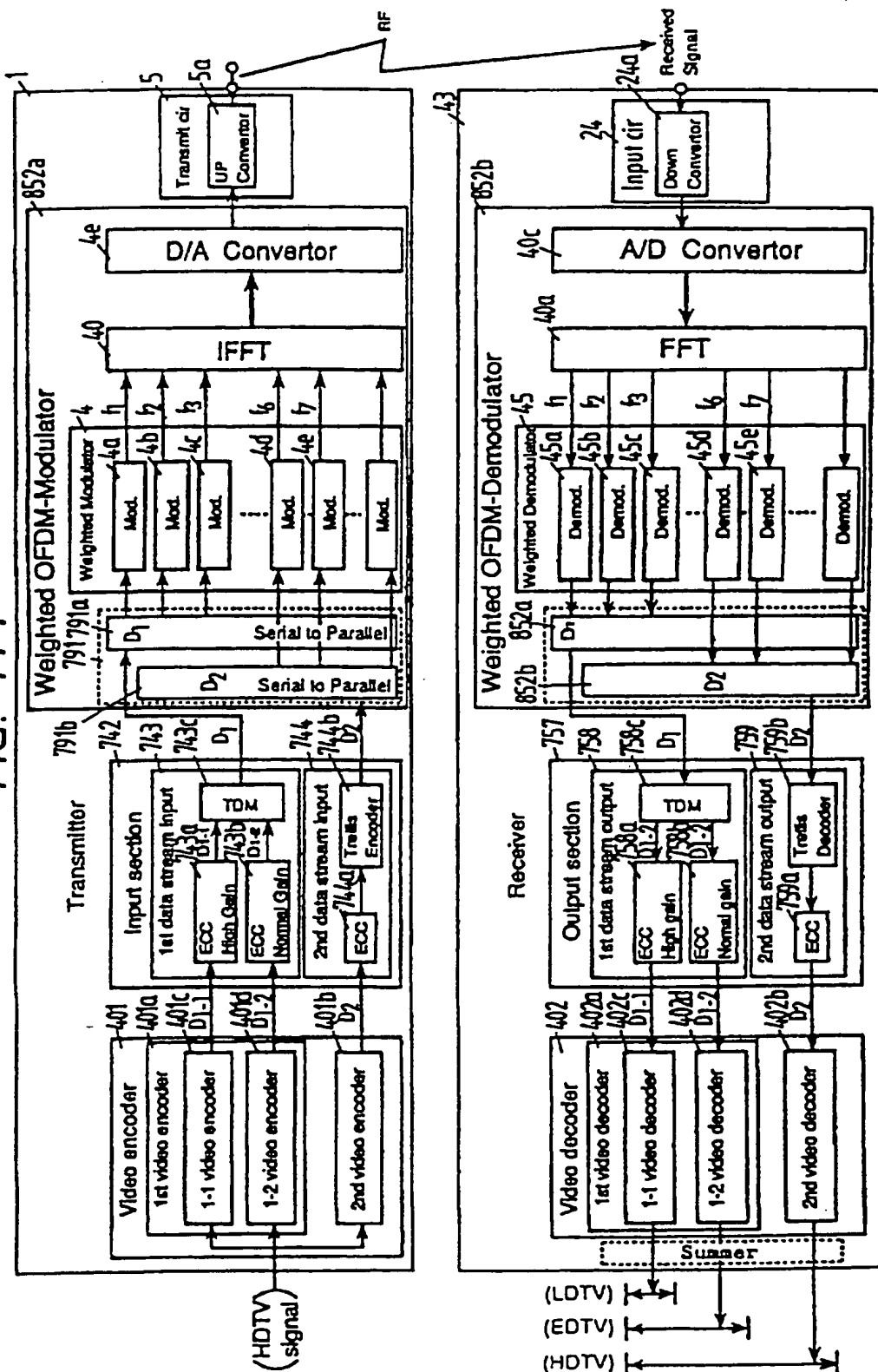


FIG. 145(a)

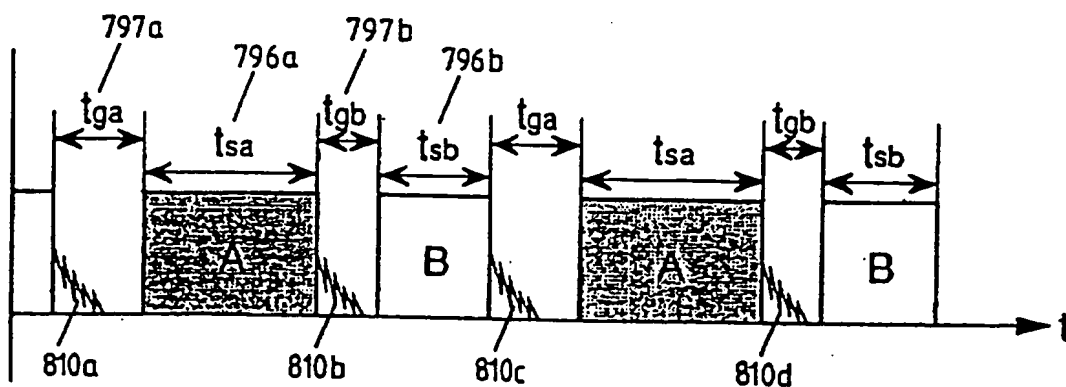
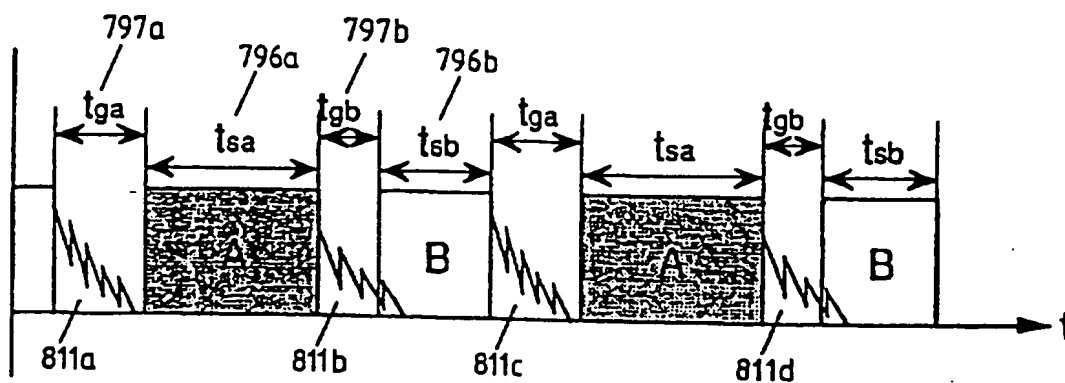


FIG. 145(b)



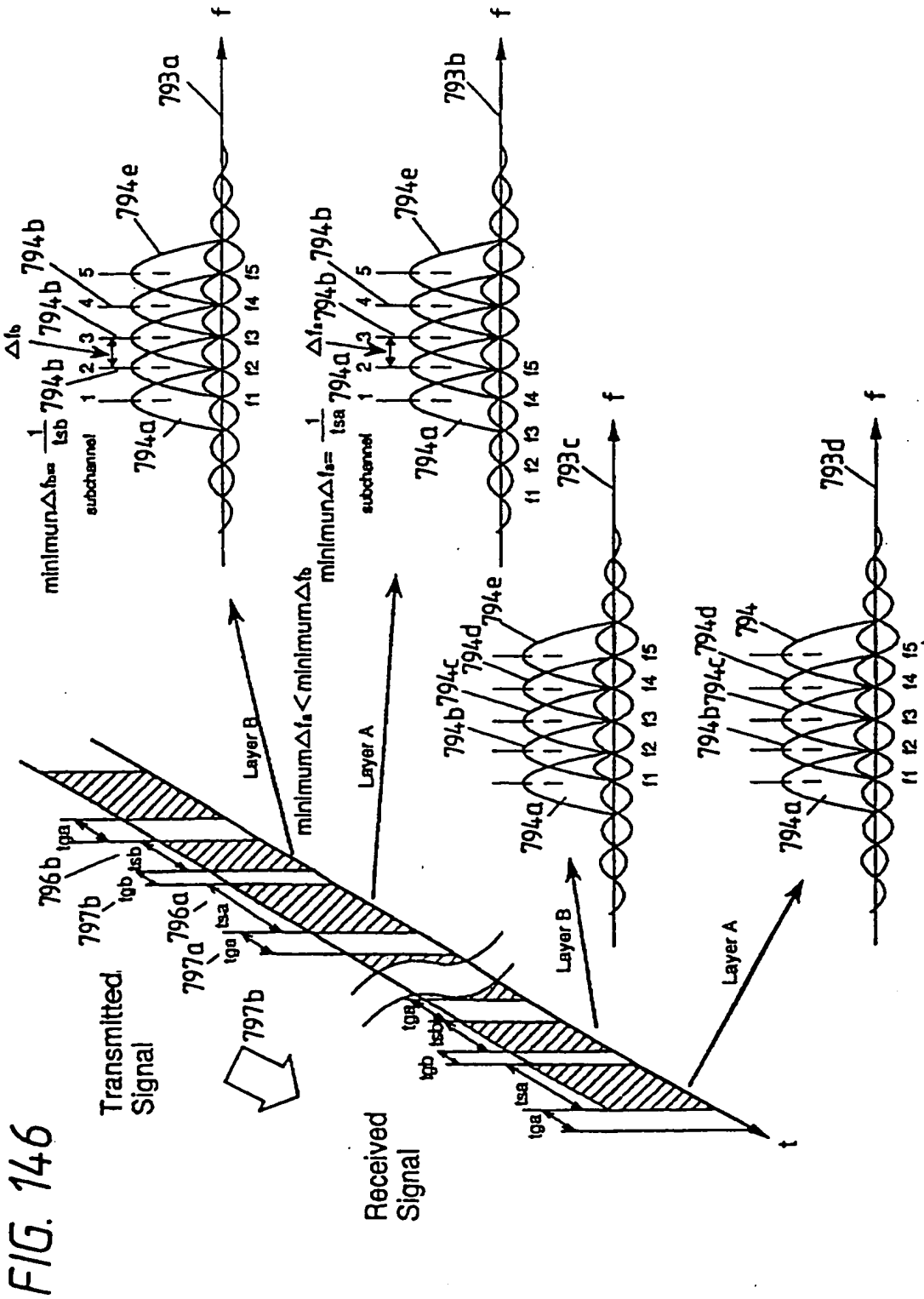


FIG. 147

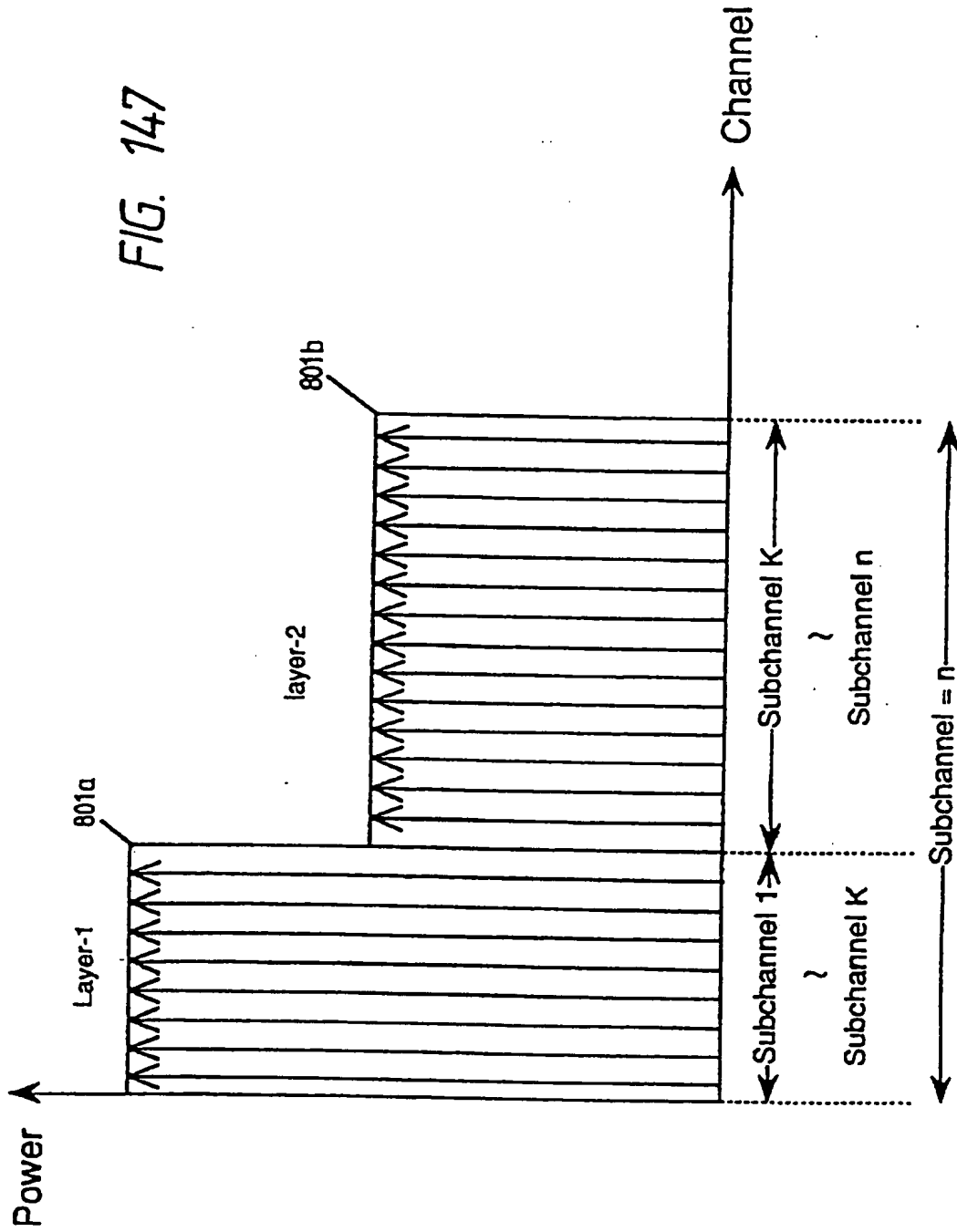
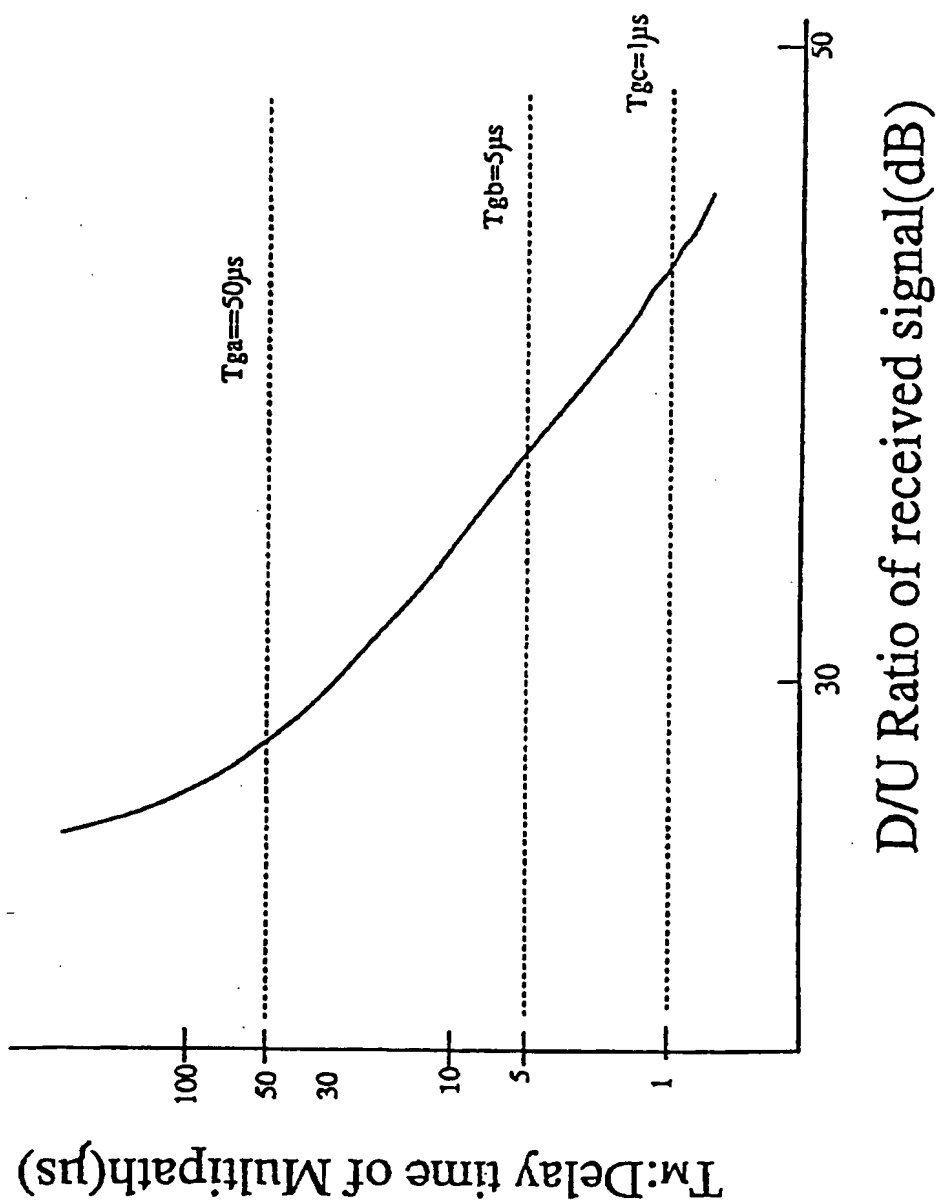


FIG. 148



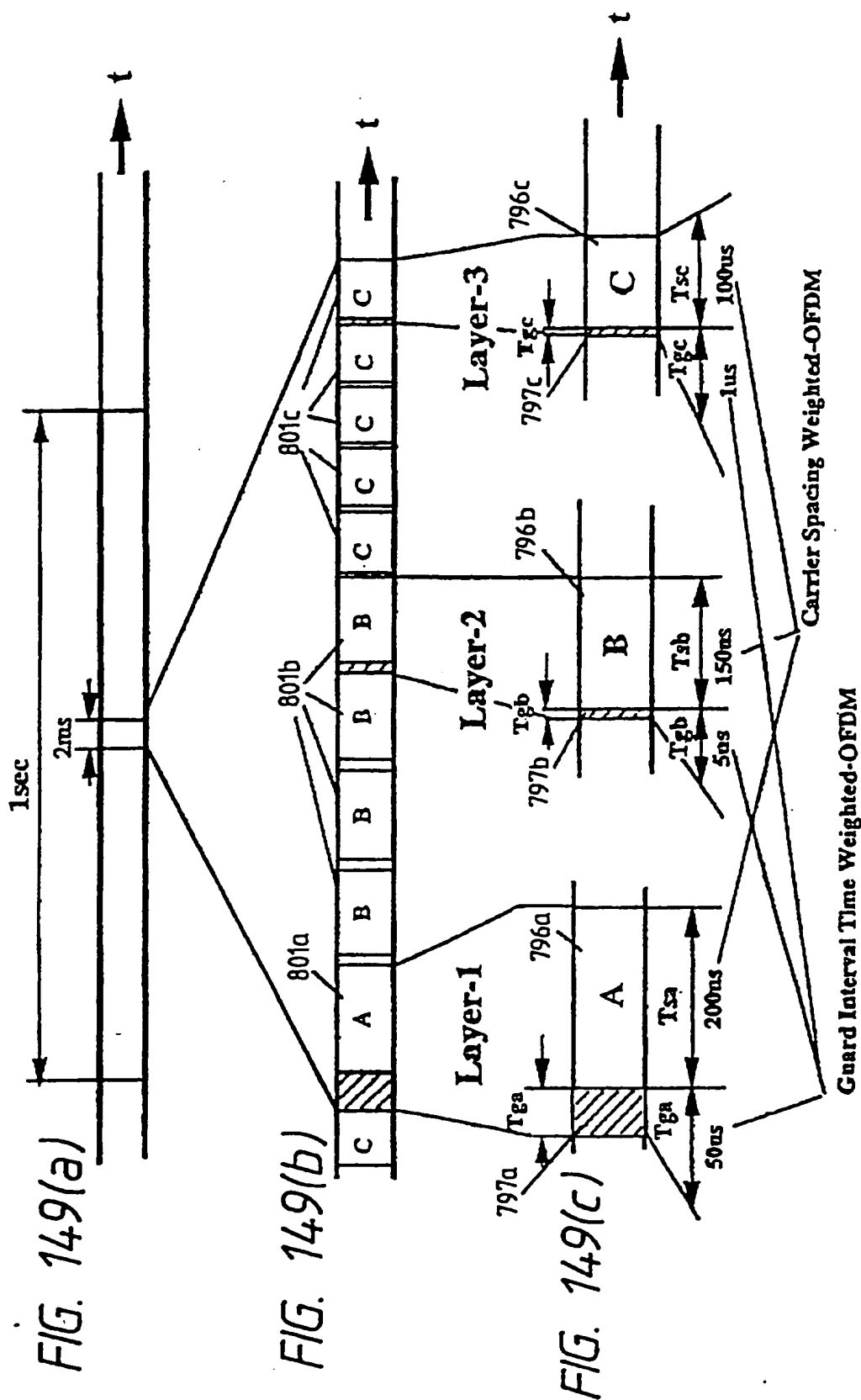


FIG. 150

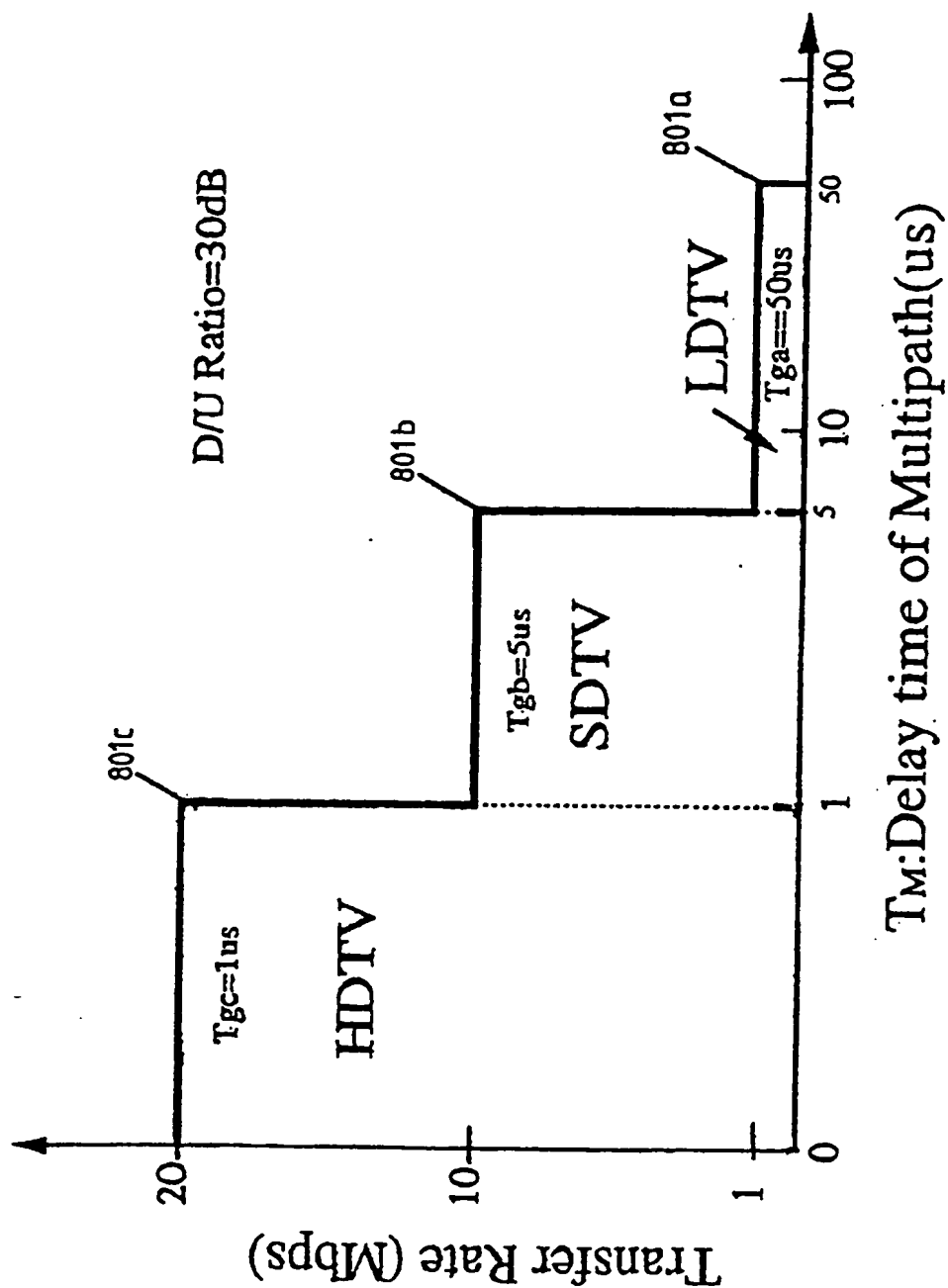


FIG. 151

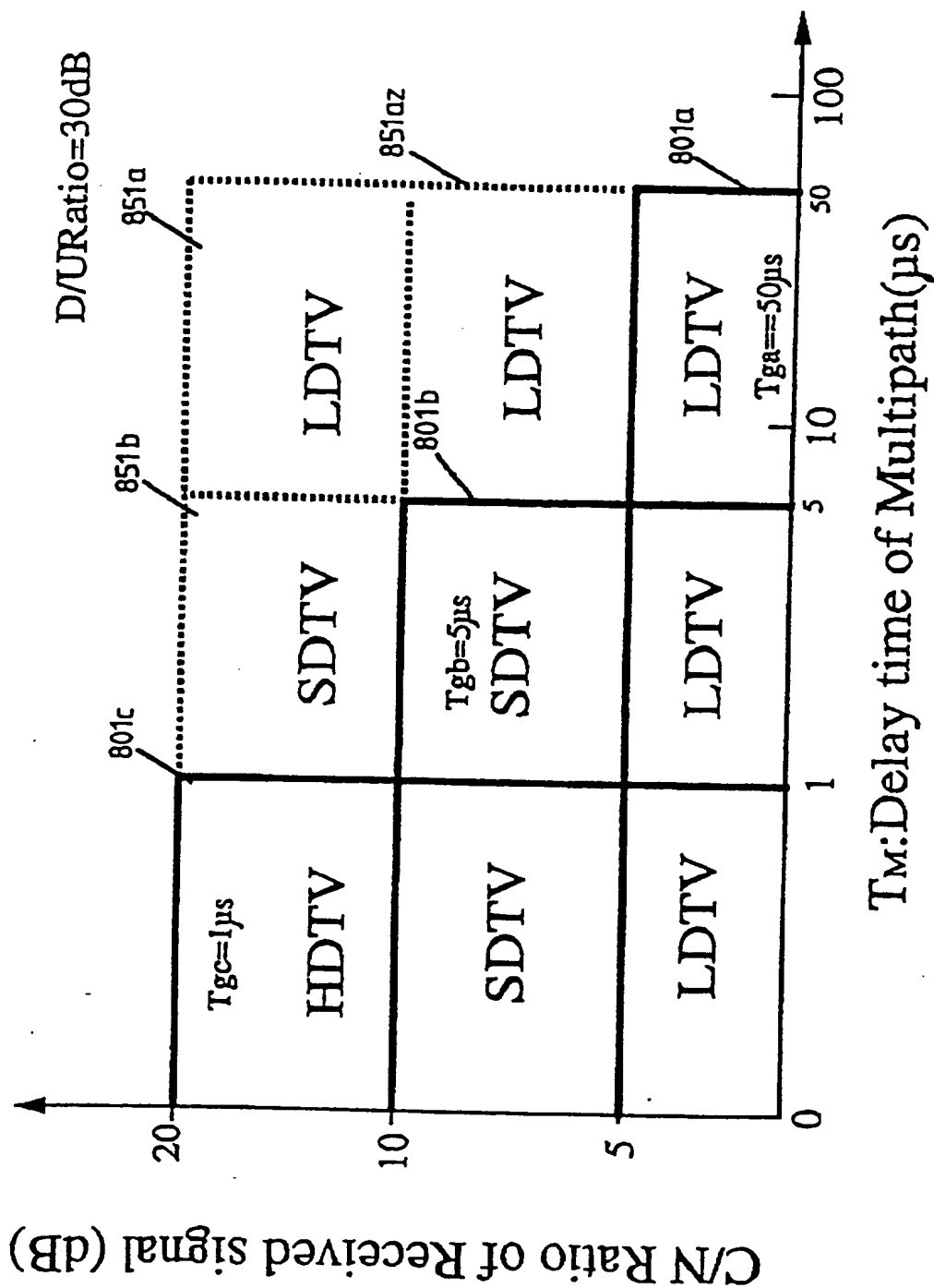
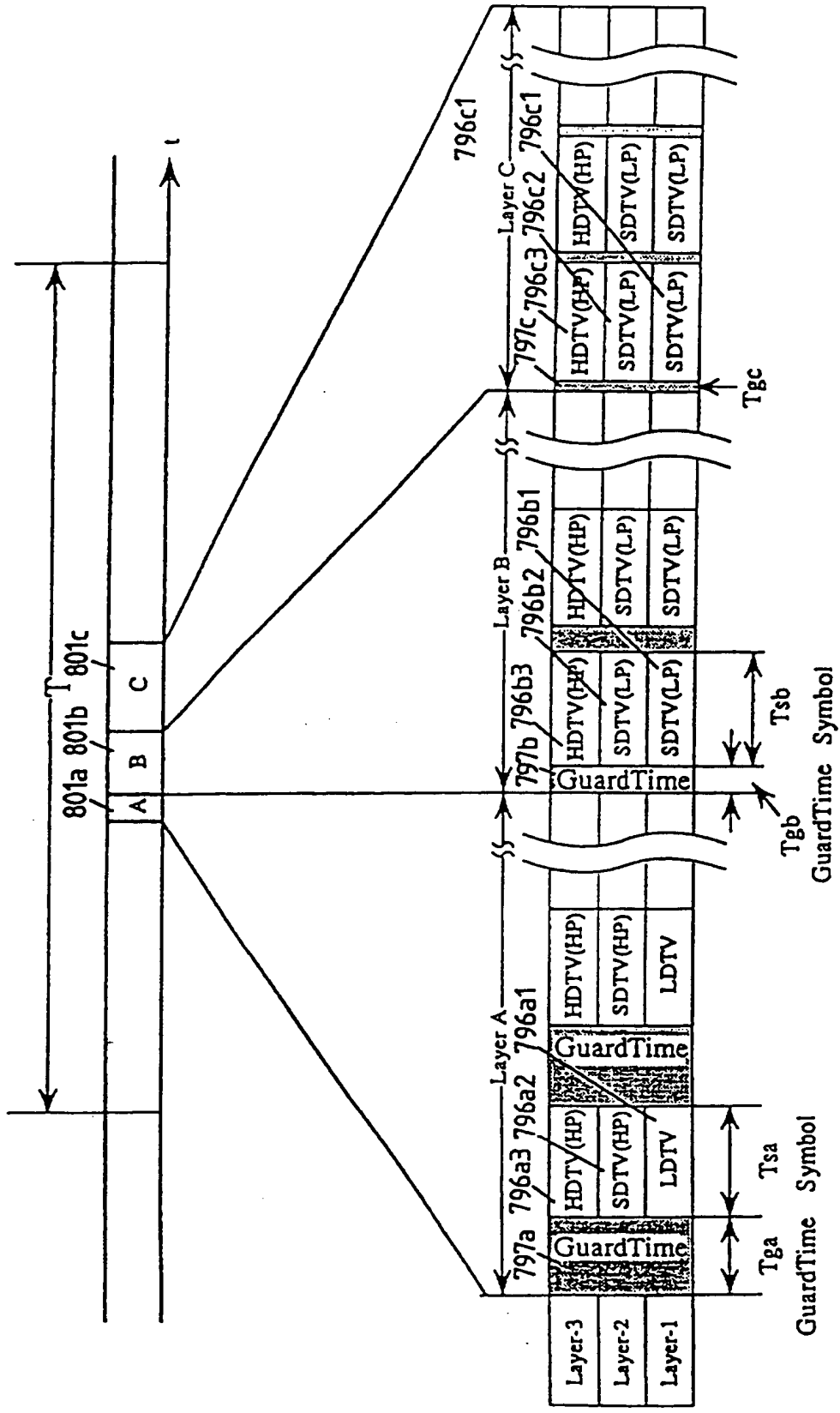
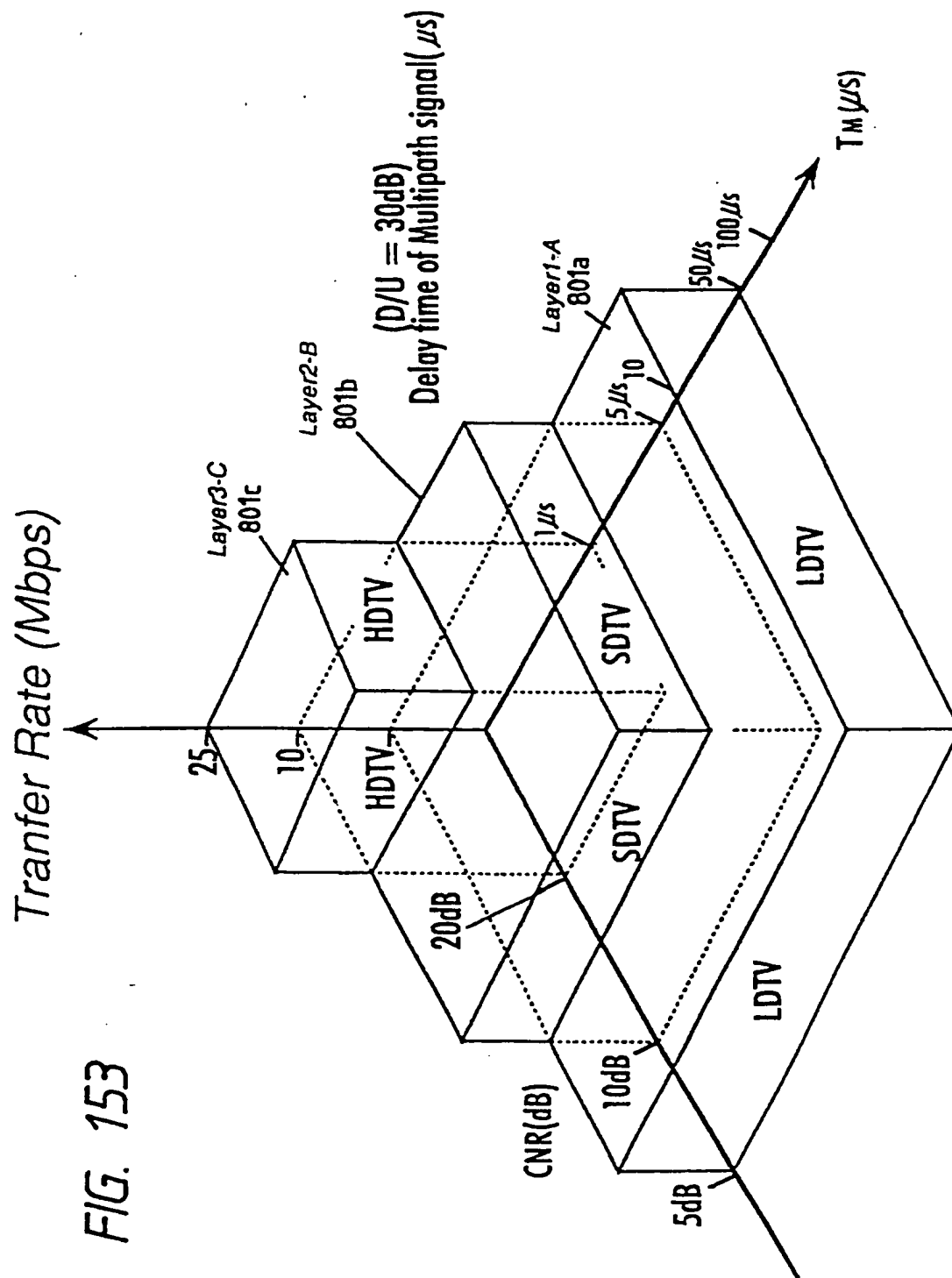
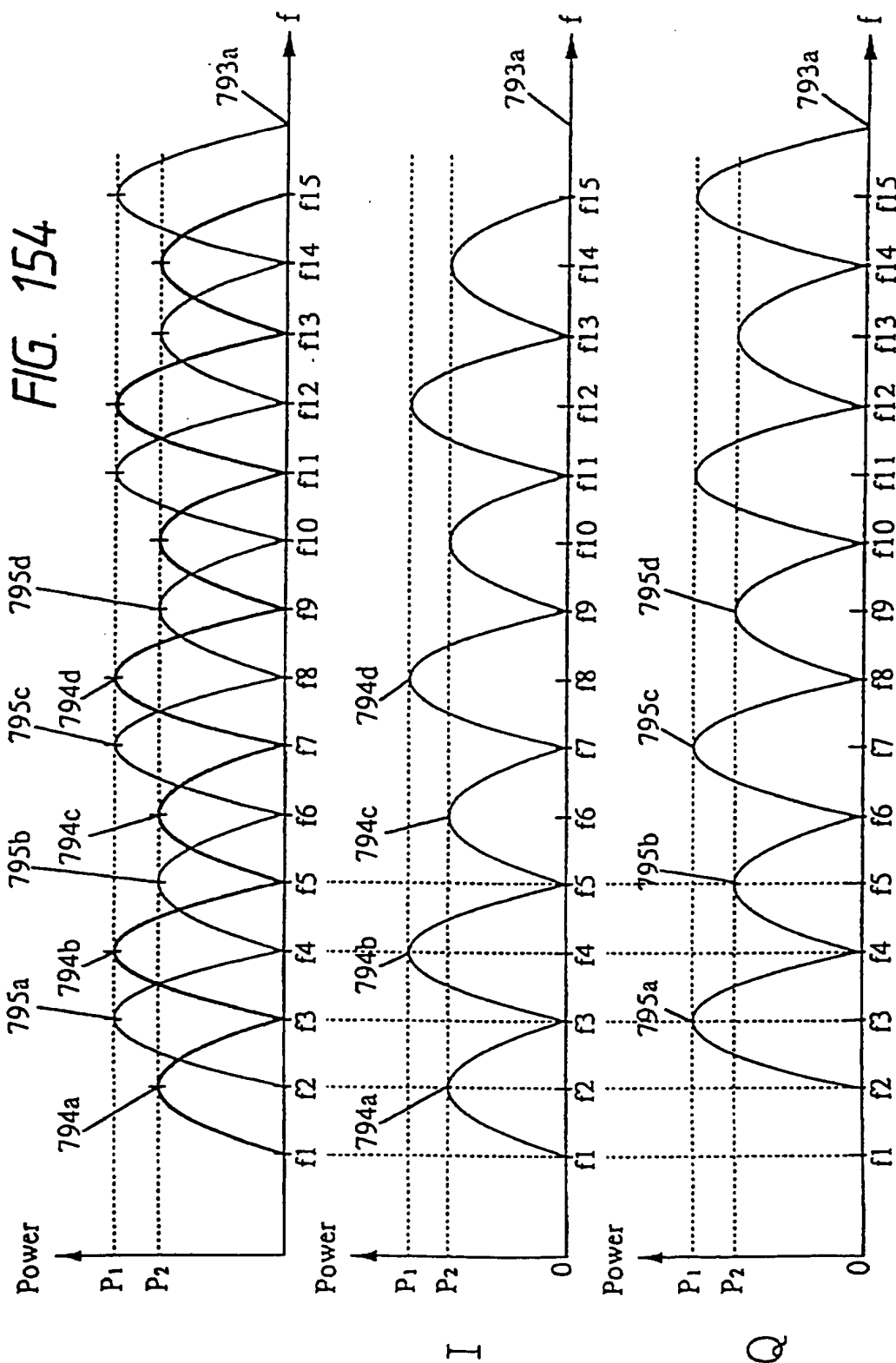




FIG. 152







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FIG. 155

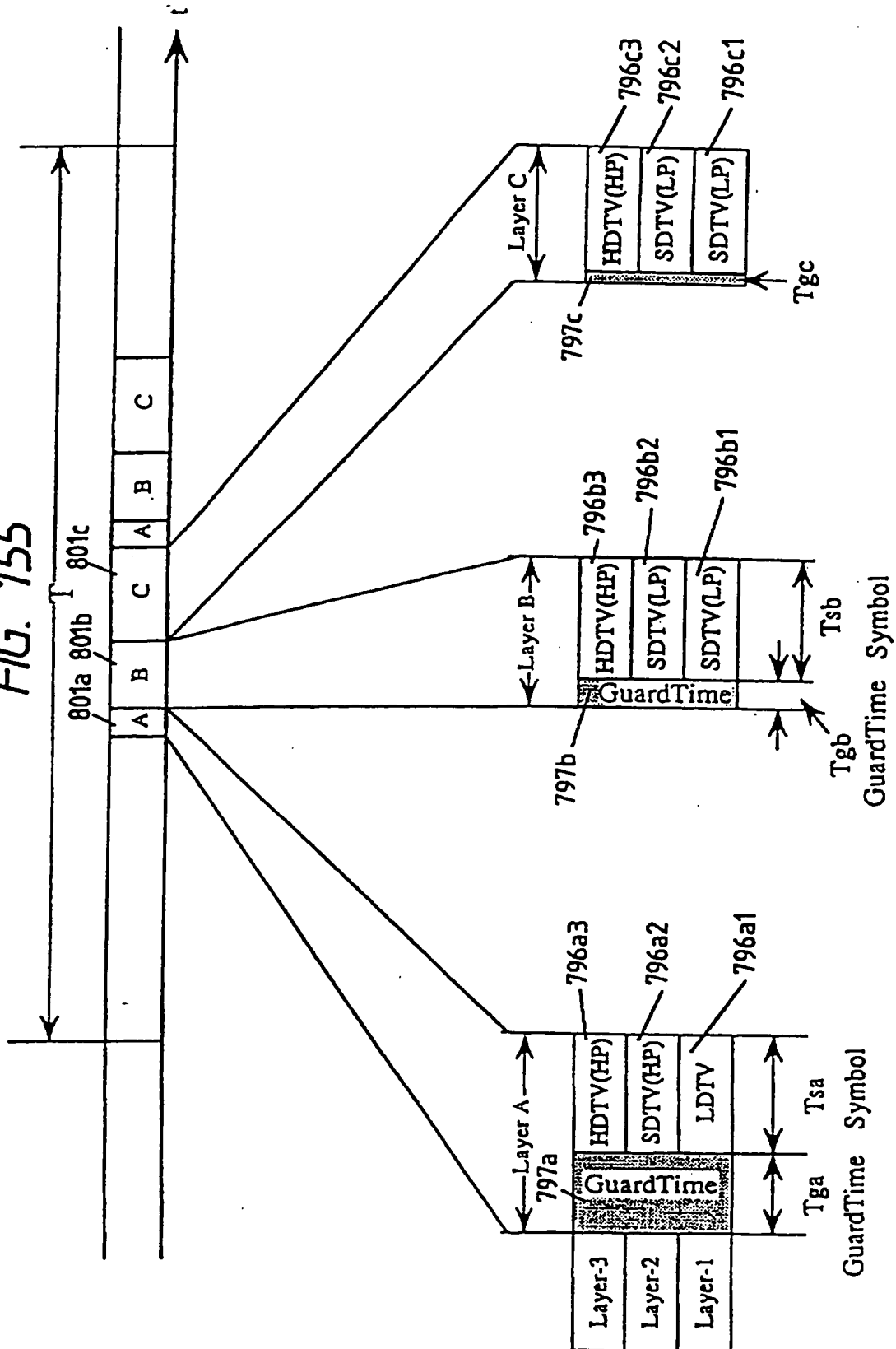


FIG. 156

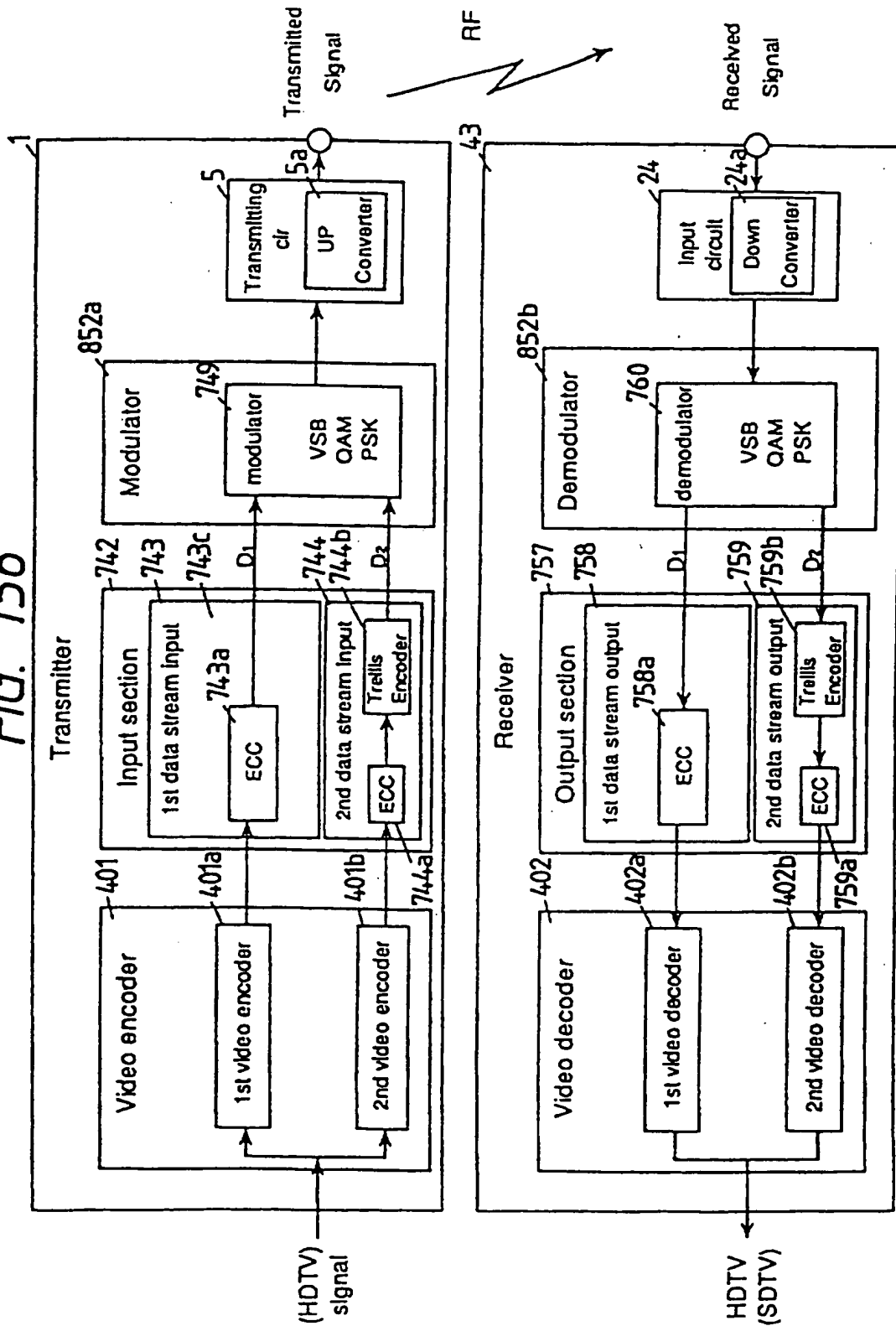


FIG. 157

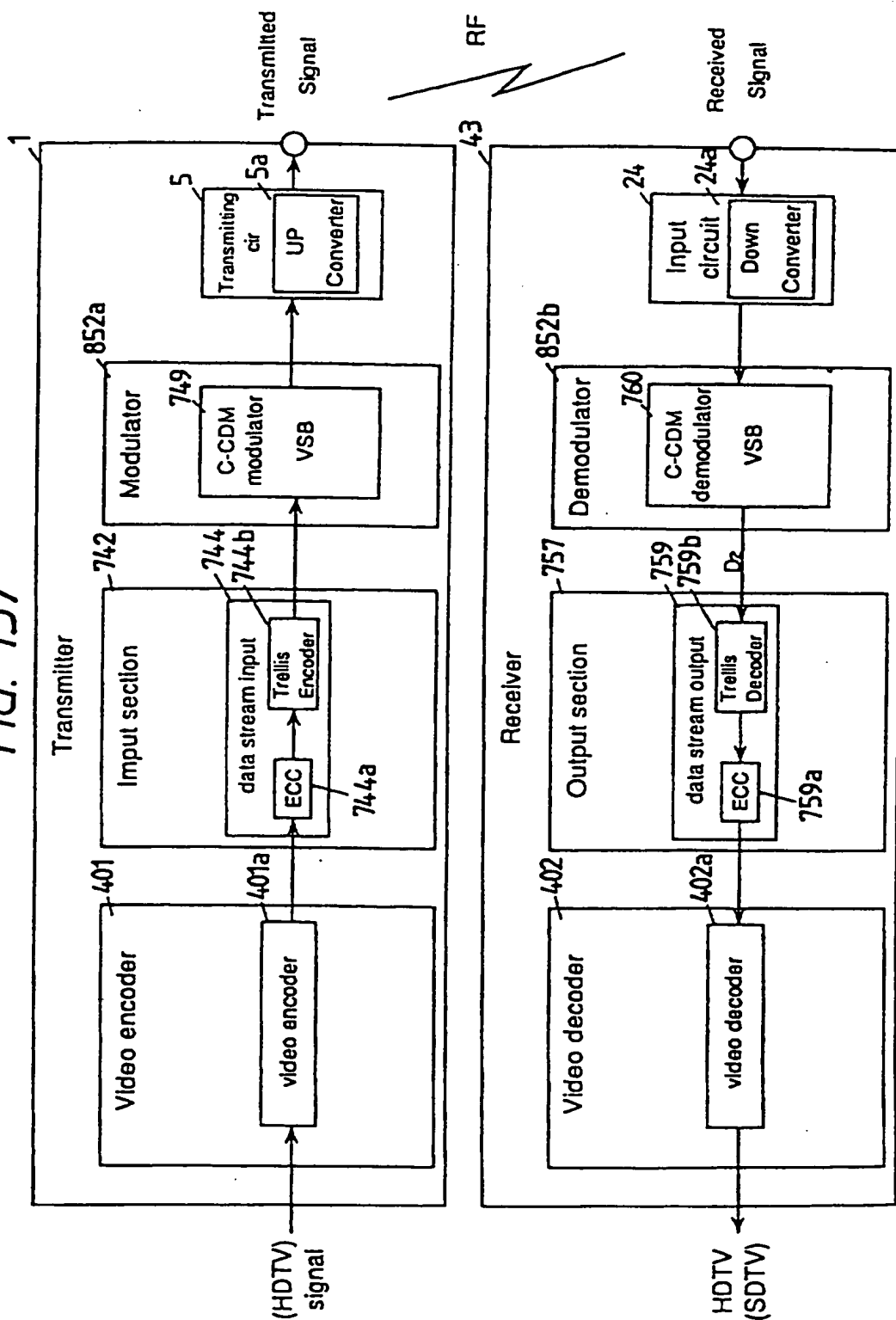


FIG. 158

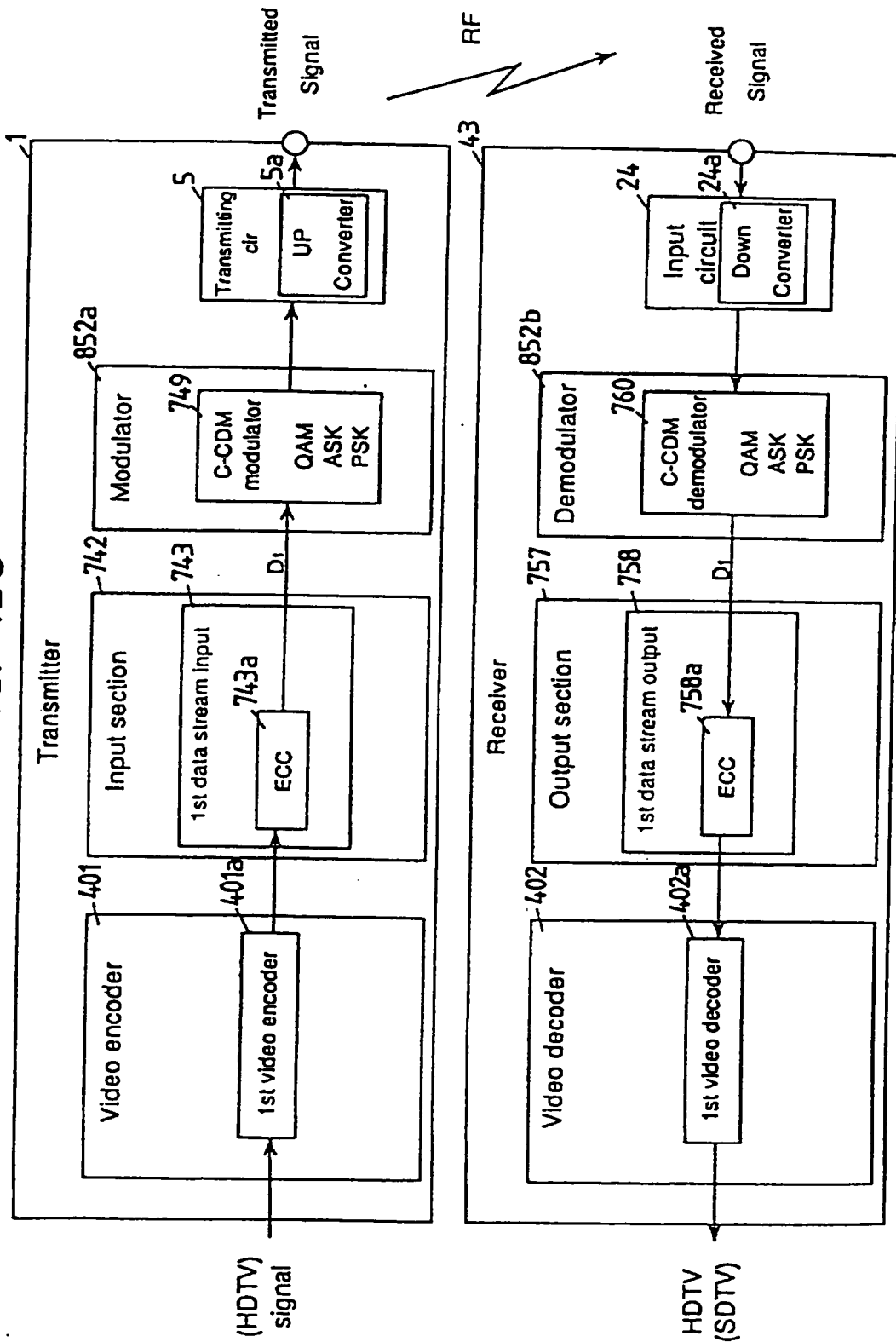
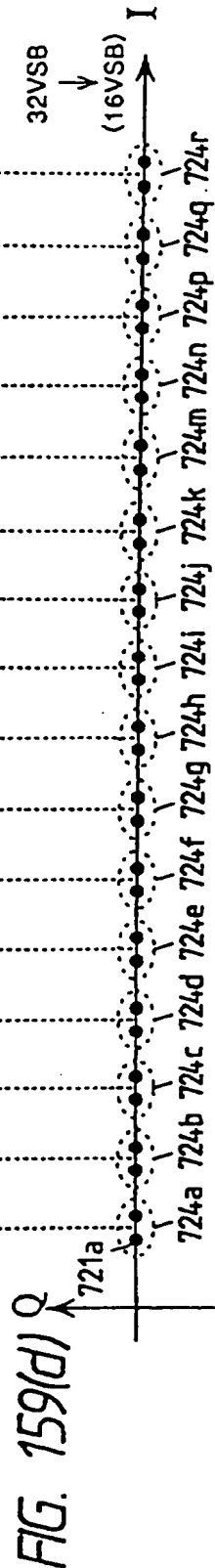
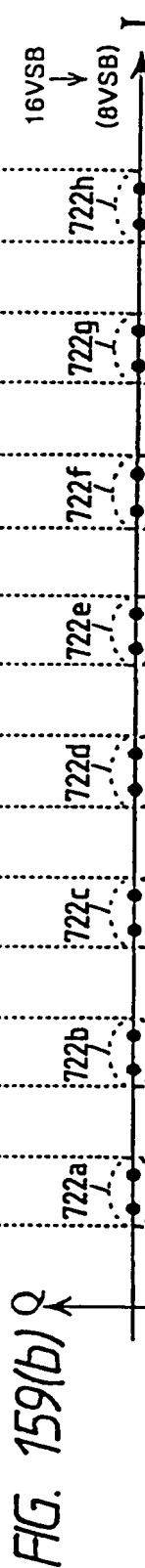
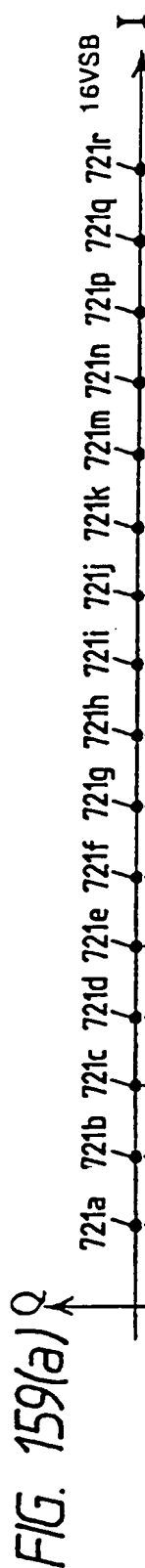


FIG. 159(a)





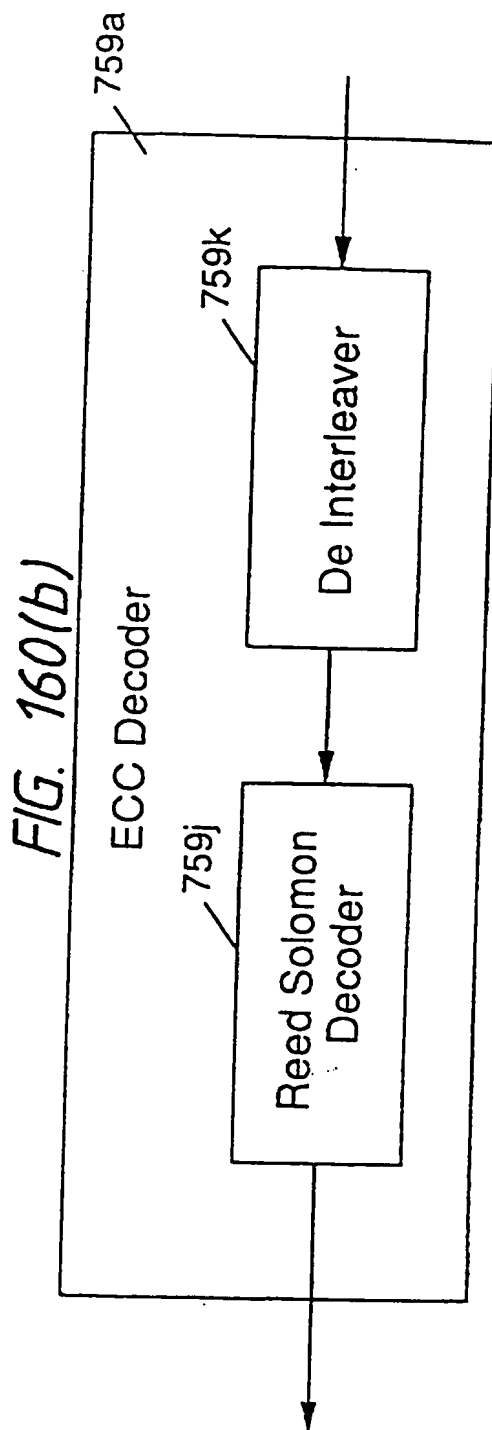
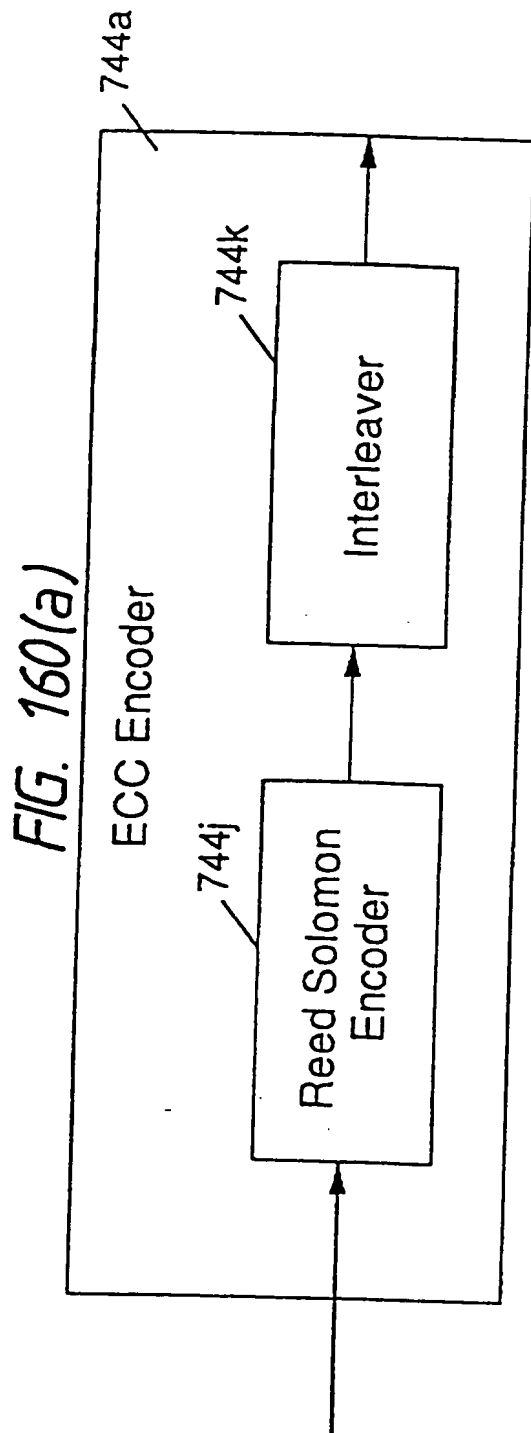


FIG. 161

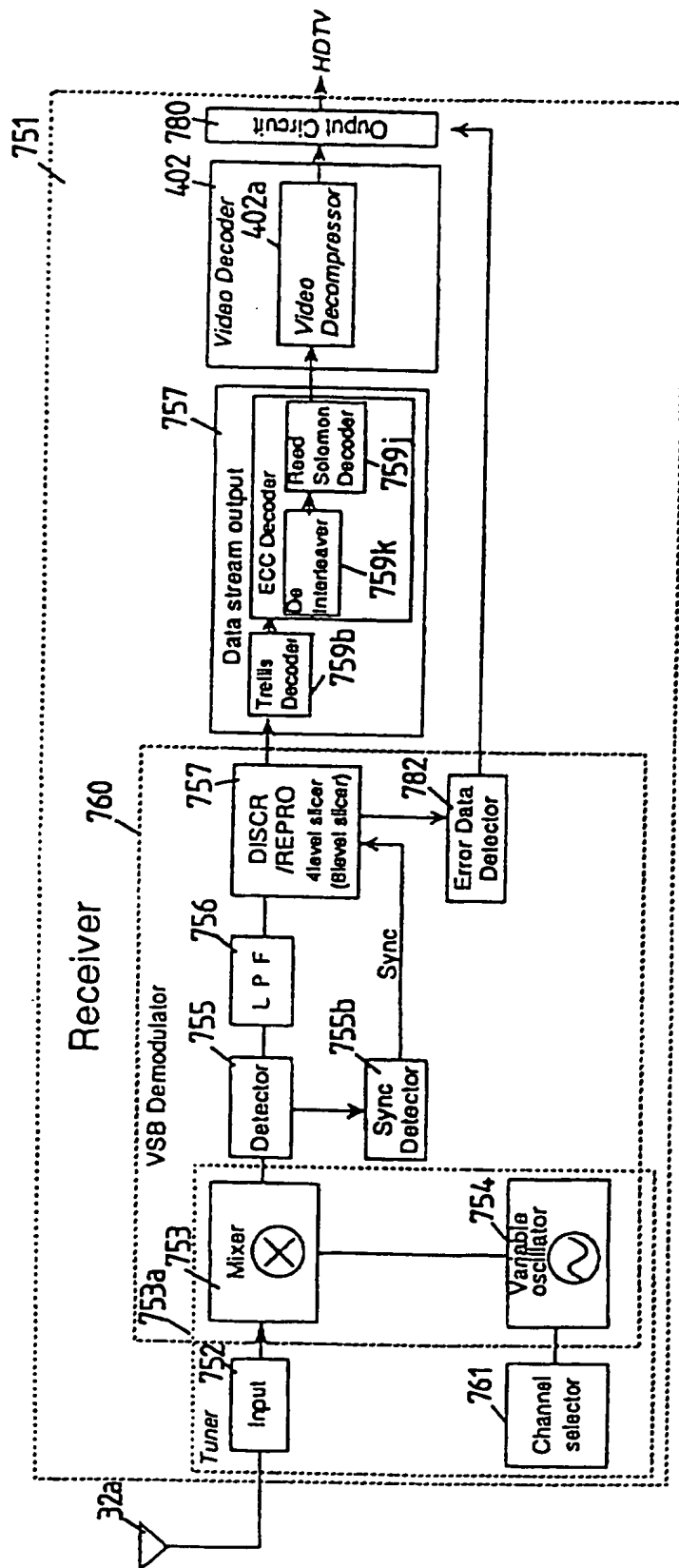


FIG. 162

FIG. 162

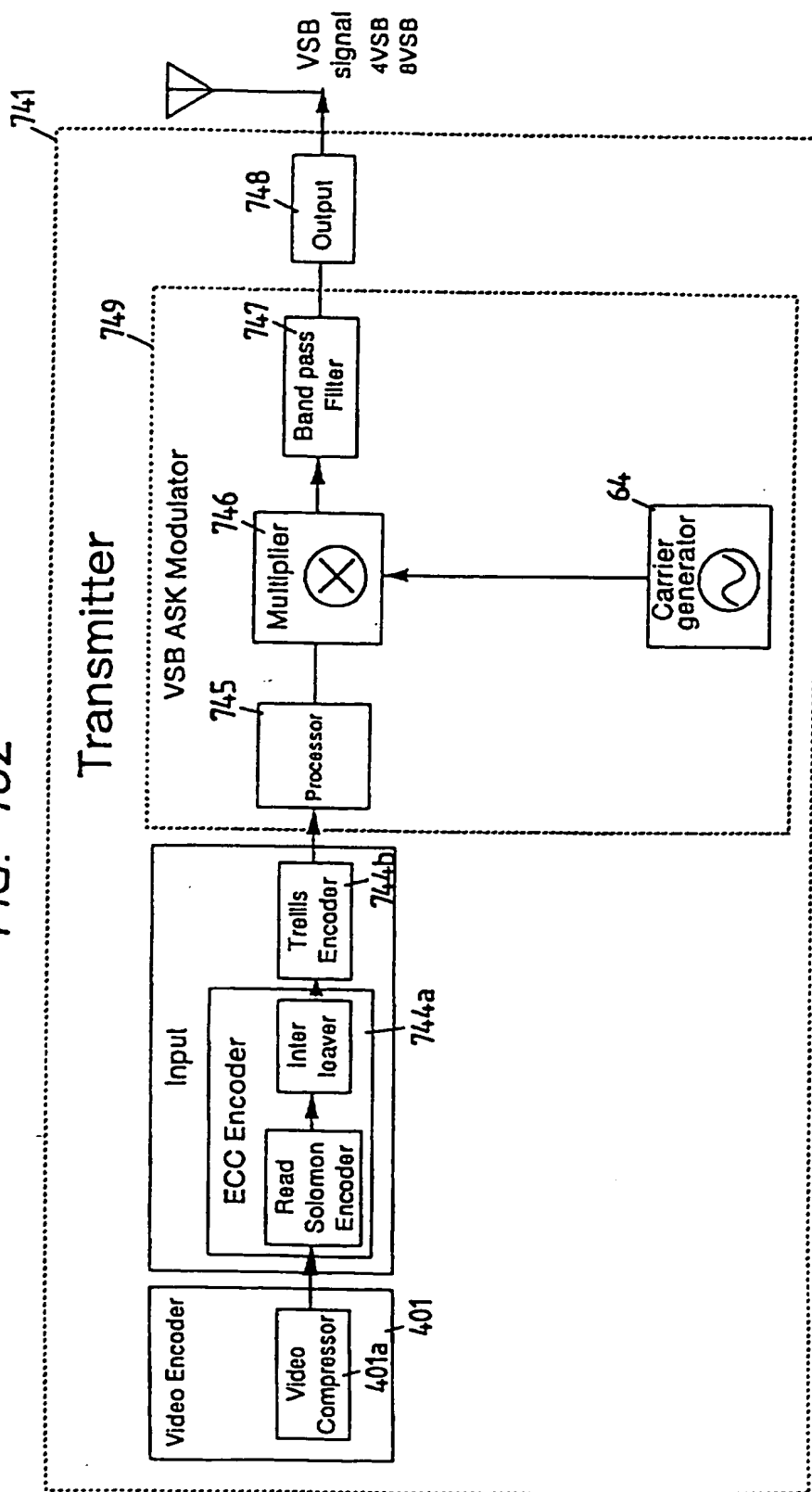
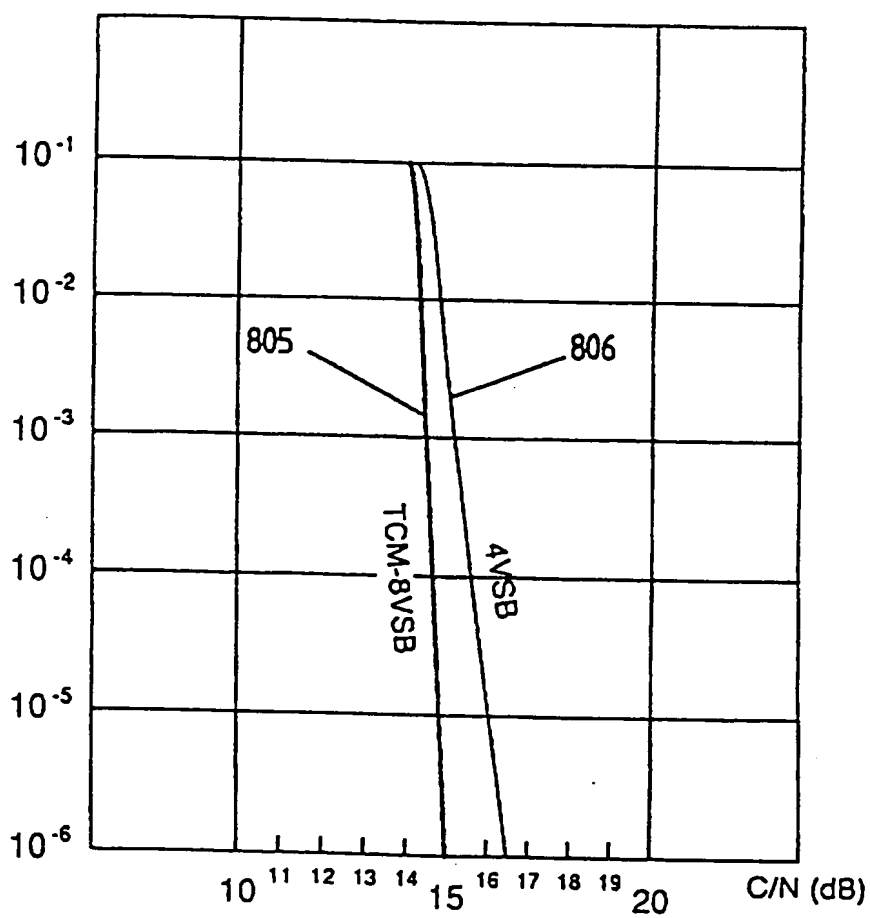


FIG. 163

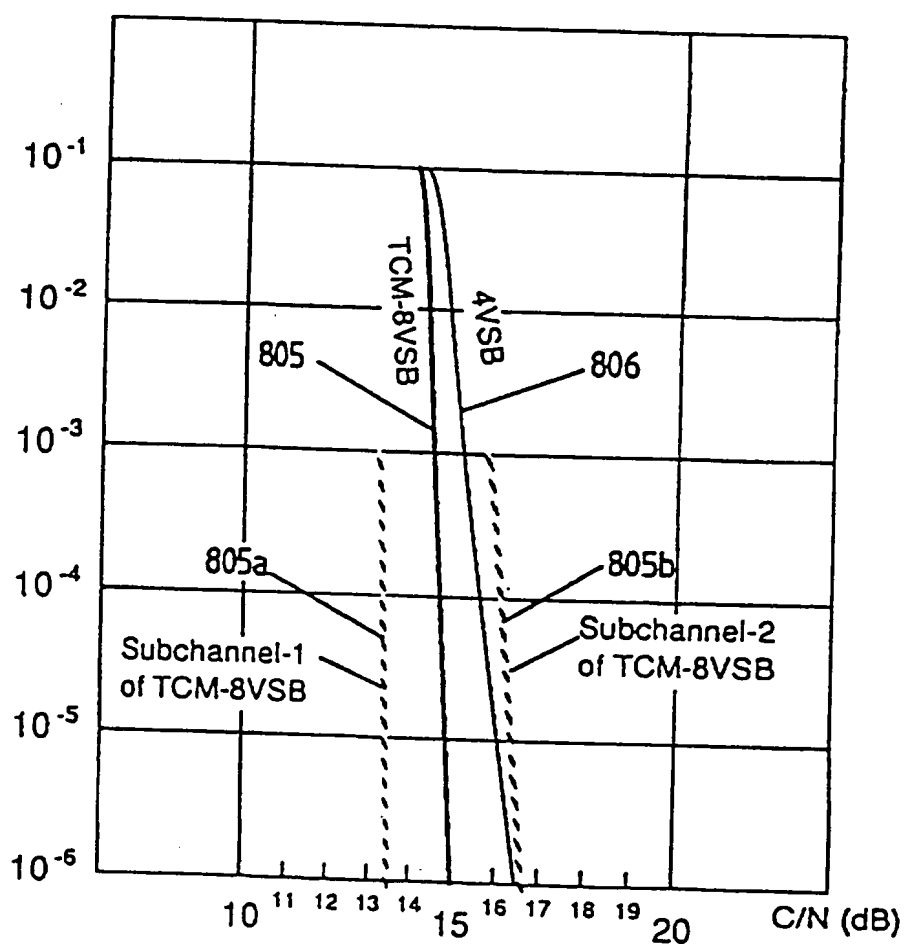
Error Probability



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FIG. 164

Error Probability



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FIG. 165(a)

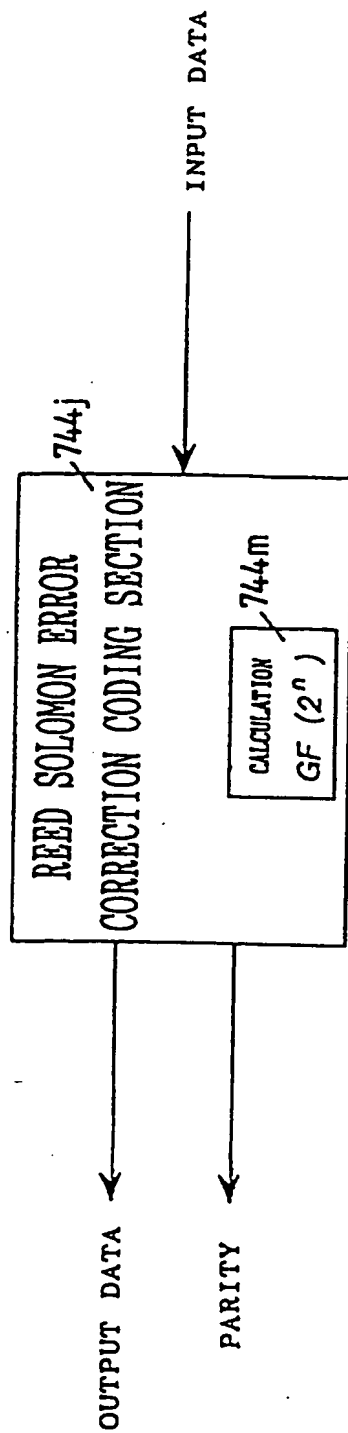


FIG. 165(b)

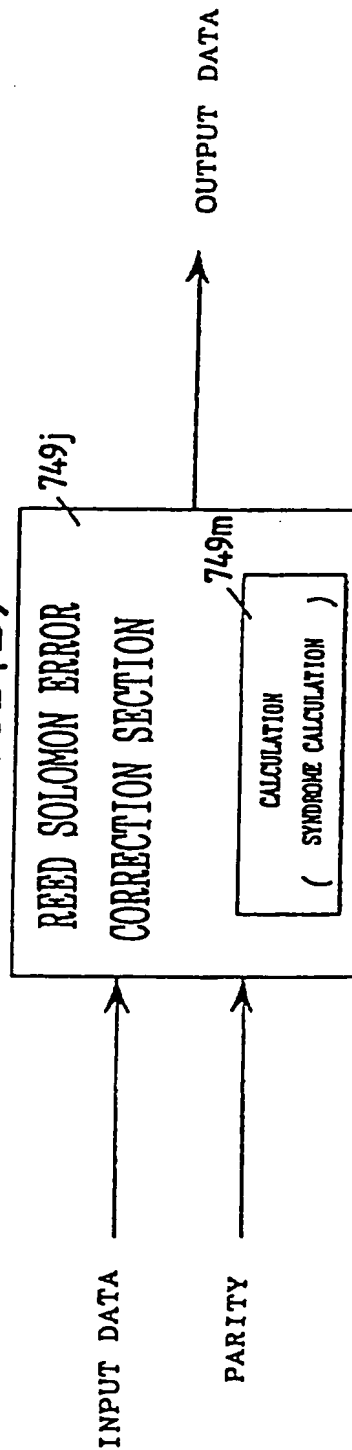




FIG. 167

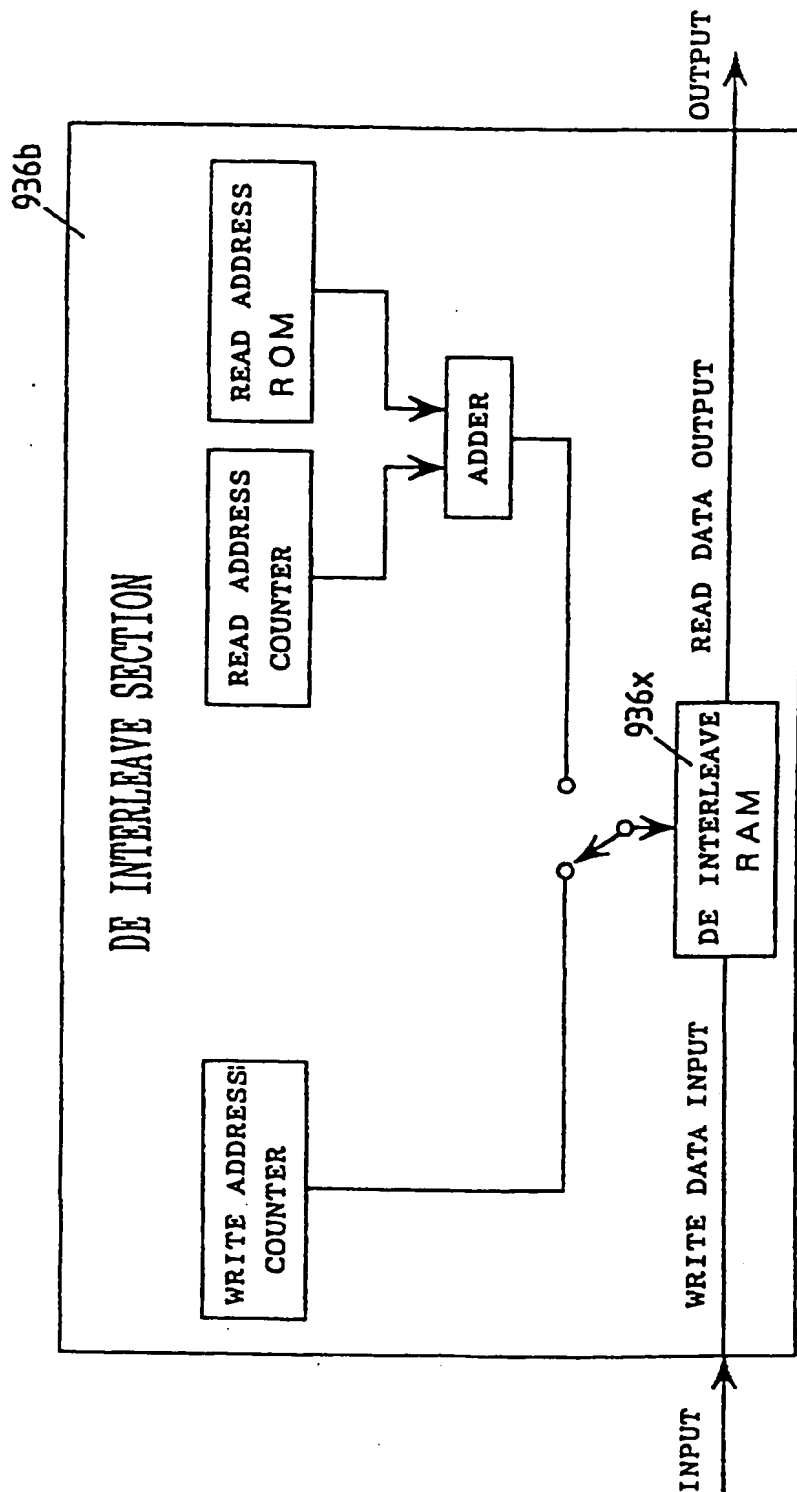




FIG. 168(a) Inter leave Table

| 1         | 2      | 3      | 4      | 5      | 6      | 7         |
|-----------|--------|--------|--------|--------|--------|-----------|
| Data      |        |        |        |        |        | C2 Parity |
| 1         | A1     | A2     | A3     | A4     | A5     | A6 Parity |
| 2         | B1     | B2     | B3     | B4     |        |           |
| 3         | G1     |        |        |        |        |           |
| 4         | D1     |        |        |        |        |           |
| 5         | E1     |        |        |        |        |           |
| 6         | F1     |        |        |        |        |           |
| C1 Parity | Parity | Parity | Parity | Parity | Parity | Parity    |

FIG. 168(b)

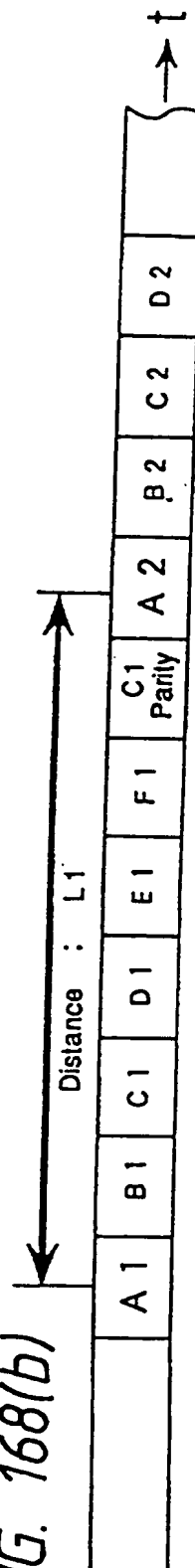


FIG. 169  
Comparison of Redundancy

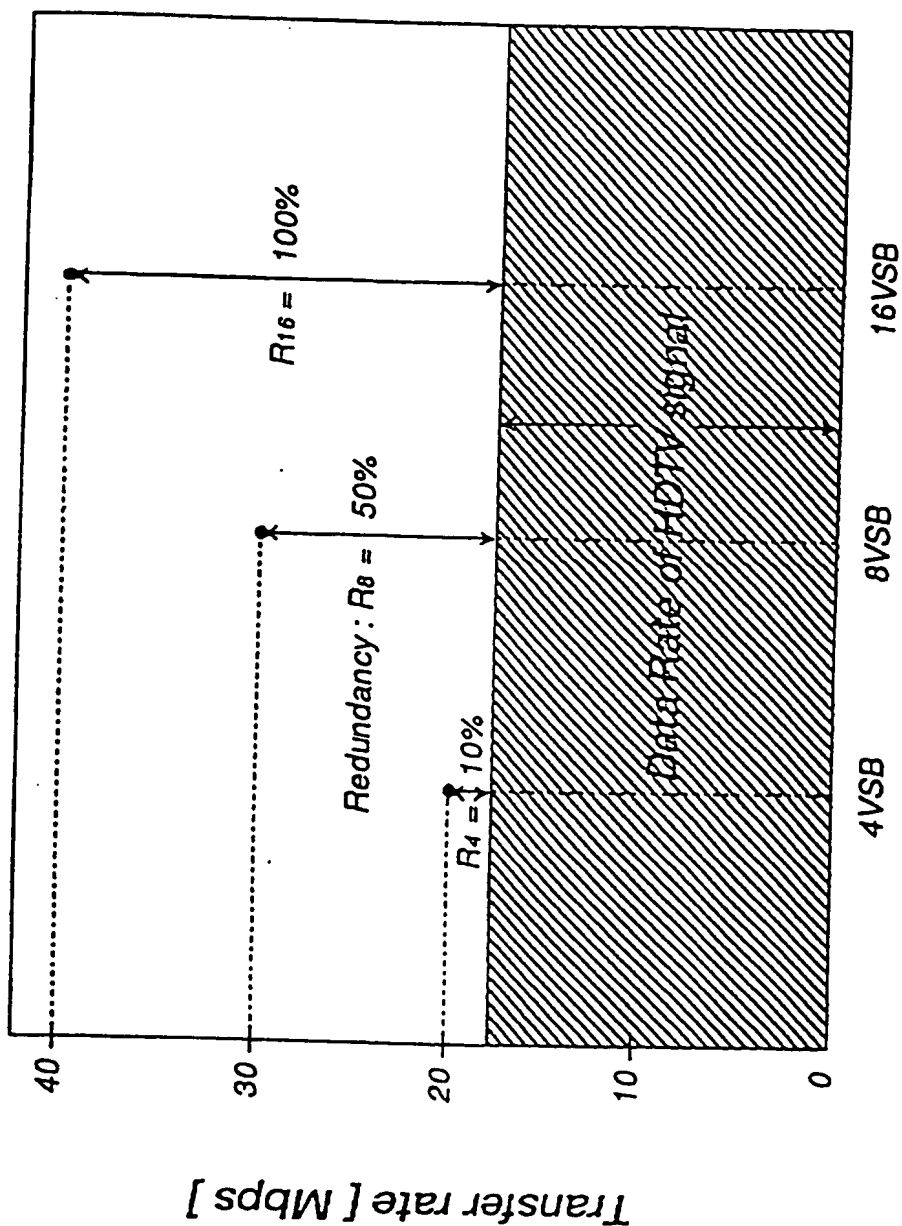


FIG. 170

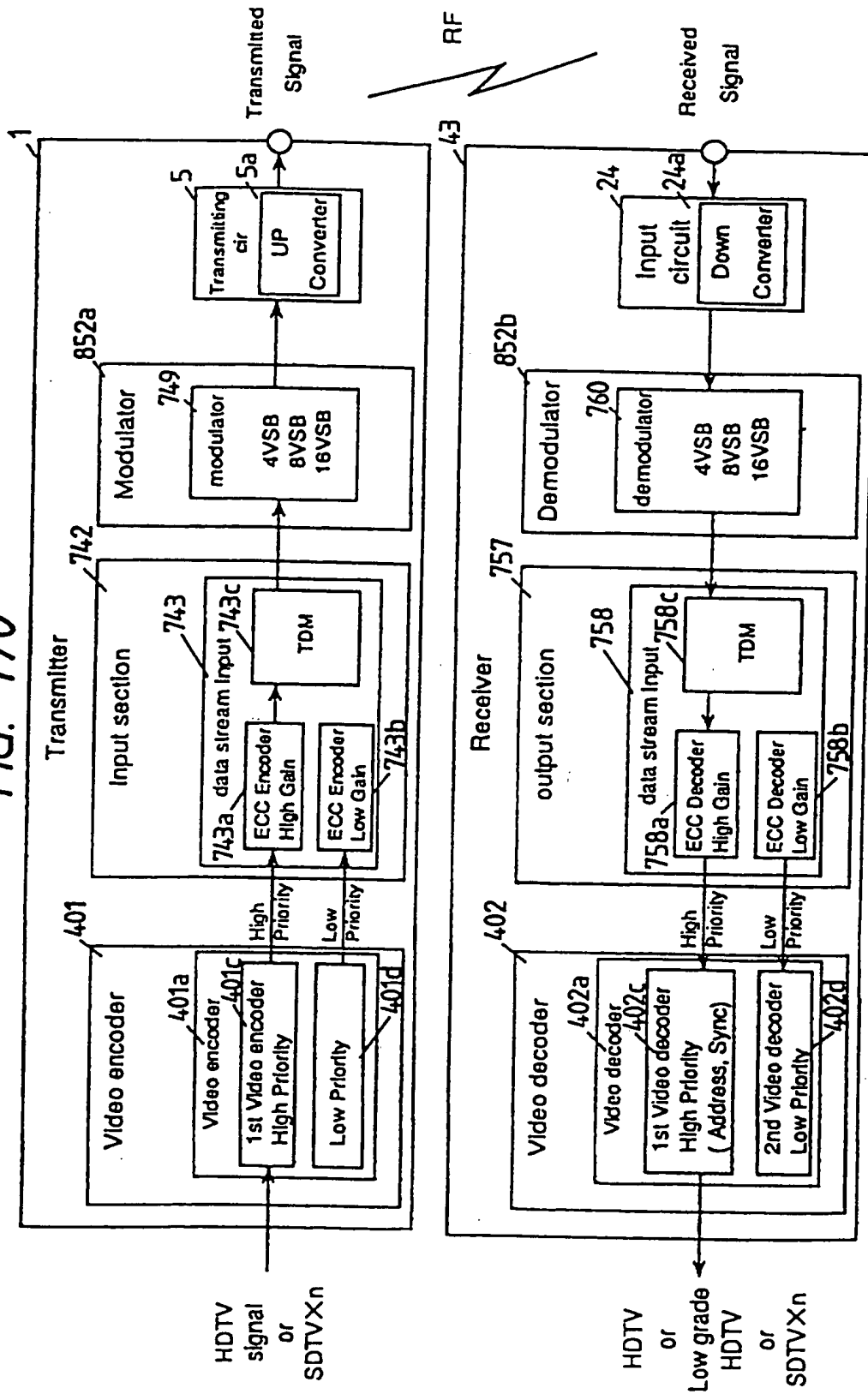


FIG. 171

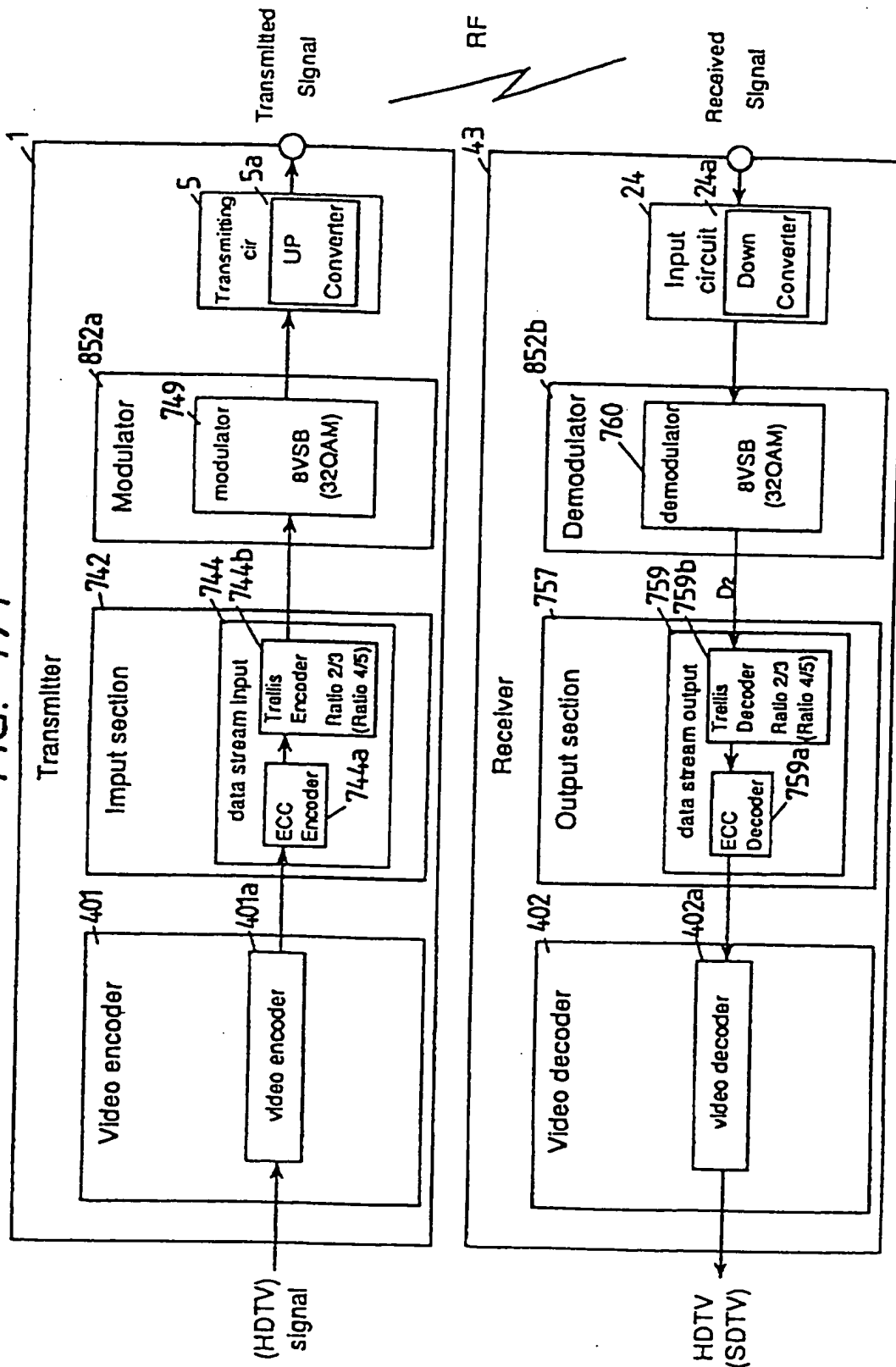


FIG. 172

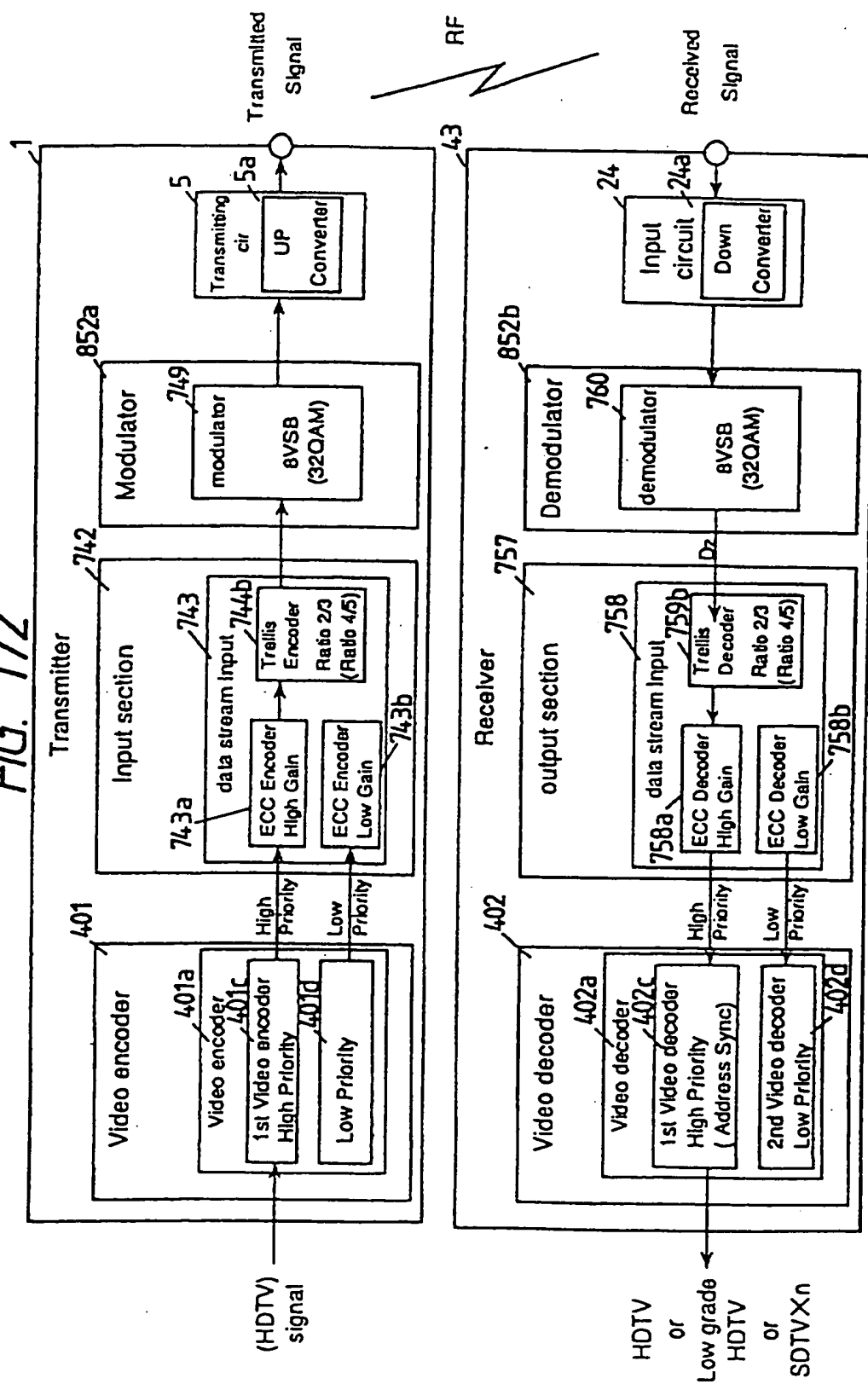


FIG. 173

